EFFECTS OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF ETHIOPIAN SUGAR MANUFACTURING INDUSTRY

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ACRONYMS

APP = Accounts Payable Period

ARP = Accounts Receivable Period

CA = Current Assets

CCC = Cash Conversion Cycle

CR = Current Ratio

DR = Debt ratio

ICP = Inventory Conversion Period

NWCM = Net Working Capital Management

ROA = Return on Assets

ROI = Return on Investment capital

SPSS = Statistical Package for Social Science

WC = Working Capital

WCM= Working Capital management

FEM= Fixed effect model

REM= Random effect model

VIF = Variance Inflation Factor

OLS = Ordinary Least Square

CLRM = Classical Linear Regression Model

ABSTRACT

Working capital plays a vital role in the company's operations and requires the efficient management and it concerns the management of cash, inventories, accounts receivable, and accounts payable. It is necessary for a company to monitor its working capital properly and maintain its balance at the appropriate level. The purpose of the study was to examine the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia. The study used secondary data collected from 3 sugar manufacturing companies covering the period from 2002-2013. The study used explanatory research design also adopted quantitative method of research approaches to test research hypothesis. The dependent variables used in the study was Return on asset (ROA) and while the independent variables were Cash conversion period (CCP), Account receivable period (ARP), Account payable period (APP), and Inventory conversion period (ICP) for measurements of working capital management, also the control variables used in the study were Current ratio (CR) as a measure of liquidity, Debit ratio (DR) for a measure of firm leverage, Firm size (FS) measured by natural logarithm of sales and Firm growth rate (FGR) which is measured by changing in annual sales value with reference to previous year's sales. The data were run using SPSS (version 20) and STATA (version 12) then analysis was made through descriptive statistics, Pearson correlation, and OLS regression. Using panel data, the study found that account payable period has a significant negative effect on profitability while account receivable period has a significant positive effect on profitability. Moreover the study found that there is significant negative effect of size on firm profitability. Furthermore, the study found that Cash conversion period, Inventory conversion period, Firm growth rate have insignificance positive effect on companies profitability. Furthermore insignificance negative effect of Debt ratio and current ratio on profitability was found. Based on the key findings from the study it has been suggested that the management of a firm can increase profitability by increasing the number of day's accounts receivable by implementing applicable collection policy for the sector and decreasing account payable period from this action the firm can benefit from discount and will have a worthy relation with the suppliers for future transaction.

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CHAPTER ONE:

INTRODUCTION

This chapter begins with discussing background of the study that gives some insight on the issues of working capital management and profitability. After giving some insight on the topics statement of the problem part was follow that shows the direction of the study, Justifies the reason to carry out this study. Following this, both general and specific objectives of the study, the research hypothesis those tested against the econometric results are presented. Lastly, the subsequent section presents significance of the study, scope, and limitation of the study, and organization of the paper.

1.1 BACKGROUND OF THE STUDY

According to Paramasivan and Subramanian(2008),capital is divided into two major headings fixed and working capital. Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets, normally it consists of non-recurring in nature. Working capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.

Makori and Jagongo (2013), define working capital as life giving force for any economic unit and its management is considered among the most important function of corporate management and it is regard as the lifeblood of a firm (Padachi, 2008).Every organization, whether profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital. However, the working capital of the firms has to be managed effectively in order to operate the typical firm smoothly this is why Brigham and Houston(2003) stated that about 60% of a typical financial manager's time is devoted to working capital Management and about 50% of the typical industrial or retail firm's assets are held as working capital (Brigham & Houston, 2008). On the other hand the direct effect of working capital is not only on the cash position and the troubles it may cause to financial managers, but it rather affects the company's profits in a more direct way. This direct effect

stems from the need of the company to borrow to finance the working capital requirements and cash gaps (Eljelly, 2004).

According to Filbeck and Krueger (2005),working capital management is an act of planning, organizing, and controlling the components of working capital like cash, bank balance inventory, receivables, payables, overdraft, and short-term loans. The objective of working capital management is to maintain the optimum balance of each of the working capital components namely cash, bank balance, marketable securities, receivables, inventory, and payable. Effective working capital management is very important due to its significant effect on profitability of company and thus the existence of company in the market (Hina, 2014).Efficient utilization of the firm's resources, as it relates to working capital management, means that executives should find effective and efficient ways to deal with the cash available for the day-to-day operations in order to achieve the optimum effect.Good working capital management leads to increased cash flows, and thus leads to lesser need on external financing; therefore, the probability of default for the firm is reduced (Deloof, 2003).

According to Raheman and Nasr (2007), the ultimate objective of any firm may be to maximize the profit. But, preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a tradeoff between these two objectives of the firms. One objective should not be at cost of the other because both have their importance. If the company does not care about profit, it cannot continue for a longer period. On the other hand, if the company does not care about liquidity, it may face the problem of insolvency or bankruptcy; therefore companies can increase profitability and maintain adequate liquidity by giving proper consideration to effective management of working capital.

According to Deloof (2003), the way in which working capital managed will have a significant effect on the profitability of firms. Accordingly, for many firms working capital management is a very important component of financial management on the company performance also on their day to day operation, from this its unavoidable to done study on this area beside there is limited study done in Ethiopia. Generally the objective of this study was to examine the effect of working capital management on sugar manufacturing companies' profitability in Ethiopia.

1.2 STATEMENT OF THE PROBLEM

As Javid and Zita (2014) states working capital management is ability of financial managers to effectively and efficiently manage their cash, receivables, inventories, and payables; this component have a significant effect on profitability and on the success of the business as well. Most of the time, liquidity goals of a firm is to have adequate cash to pay for its bills, to make large unexpected purchases and finally, firm has an adequate cash reserve to meet emergencies in all time. Whereas, profitability goal on the other hand requires that, funds of a firm are used so as to yield higher returns. Therefore, when one increases, the other decreases (Brigham & Houston, 2003), also Van Horne and Wachowicz (2004) pointed out that excessive level of current assets have a negative effect on firm's profitability, while lower level of current assets lead to lower liquidity and stock-outs, and result in difficulties of maintaining smooth operations. From this it is worthwhile to have effective working capital management within the company.

Regarding to researches on the effect of working capital management on profitability Hassan (2010) described that lots of research has been carried out all over the world especially in developing countries like Pakistan, India, and Taiwan etc. although Abera (2010) states on his study that in Ethiopia research studies on working capital management on profitability remained an ignored area of empirical research.

The effect of Working capital management on profitability has been studied significantly by different researchers (Karaduman, 2004; Abera, 2007; Akbasand Ozsozgun, 2010; Soekhoe, 2012; Arunkumar and Radha, 2013; Kaur and Singh, 2012; Rehman, 2013; Ebenezer and Asiedu, 2013; Akoto, Vitorand Angmor, 2013; Hina, 2014; and Mengesha, 2014).Most of this and other researchers identify there is a significance effect of working capital management on profitability. But still there are inconsistencies between the findings of some researchers. For instance the study conducted by (Deloof, 2003; Mekonnen, 2011; Raheman and Nasr 2007; Karaduman; Akbas and Ozsozgun, 2010; Mengesha, 2014 and Mohammed, 2011) found that account receivable period, account payable period, inventory conversion period have negative effect on firm's profitability. Other researchers like Mathuva (2011) and Muoki (2013) found that profitablity has positively affected by average collection period and average payment period.

Therefore based on the absence of clear-cut direction of effect between any of the variables of working capital management on firms profitability as indicated in previous studies the researcher need to examine the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia, (this section further discussed on the literature review part).

Moreover most studies concentrated on large firms operating within well-developed money and capital markets of developed economies. From such findings it is difficult to generalize for relatively under developed country like Ethiopia and specifically to the sugar company. To the best knowledge of the researcher while searching on internet and looking journals the researcher didn't find directly related to research topics carried out in Ethiopia.

Though, there are a few studies with reference to Ethiopia on working capital management and firm profitability, For example, Abera (2007)focused on the effect of working capital investment and financing policies on firms' profitability by using audited financial statements of a sample of 11 manufacturing private limited companies in Tigray region, for the period of 2005 to 2009.Mekonnen (2011) on the other hand, examined the impact of working capital management on profitablity for a sample of thirteen (13) companies in Addis Ababa, for the period of five years (2005-2009). Furthermore Vallalnathan and Joriye, (2012) investigated the impact of working capital management on the profitability of cooperative unions in East Showa, Ethiopia For eight sample cooperative unions in East Showa, Ethiopia for the period of five year from1999-2003 Ethiopian Calendar(E.C.). Finally, Mengesha (2014) examined the impact of working capital management on firm's performance by using audited financial statements of a sample of 11 metal manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2008 to 2012.However, these studies provide limited evidence on the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia.

Generally this study contributes to the literature on the effect of the working capital management on firm's profitability in at least three ways. First, it focuses on sugar manufacturing companies in Ethiopia where no research has been conducted. Second, this study confirms some of the finding of previous authors by examining the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia. Thus, this study adds ingredient to the existing theory developed by previous authors perhaps there is no

consensus on the nature of the effect of different empirical results therefore; this study seeks to contribute to this empirical research gap. Third most studies conduct 5-10 years financial statement unlike to other studies this study conducted based on 12 years of financial statement.

1.3 OBJECTIVE OF THE STUDY

1.3.1 GENERAL OBJECTIVE

The general objective of this study was to examine the effect of working capital management on sugar manufacturing companies' profitability over a period of twelve years.

1.3.2 SPECIFIC OBJECTIVE

This study has the following specific objectives.

- To examine the effect of cash conversion period on sugar companies profitability in Ethiopia.
- To examine the effect of account receivable period on sugar companies profitability in Ethiopia.
- To examine the effect of inventory conversion period on sugar companies profitability in Ethiopia.
- To examine the effect of account payable period on sugar companies profitability in Ethiopia.
- To examine the effect of liquidity on sugar companies profitability in Ethiopia.
- To examine the effect of firm size on sugar companies profitability in Ethiopia.
- To examine the effect of debt used on sugar companies profitability in Ethiopia.
- To examine the effect of firm growth rate on sugar companies profitability in Ethiopia.

1.4 RESEARCH HYPOTHESIS

In light of the research objective and based on the discussion in the literature review the following hypothesis was formulated.

HP_1: Cash conversion period has significant negative effect on sugar companies' profitability in Ethiopia.

HP_2: Accounts receivable period has significant negative effect on sugar companies' profitability in Ethiopia.

HP_3: Inventory holding period has significant negative effect on sugar companies' profitability in Ethiopia.

HP_4: Accounts payable period has significant negative effect on sugar companies' profitability in Ethiopia.

HP_5: Liquidity has significant negative effect on sugar companies' profitability in Ethiopia.

HP_6: Firm size has significant positive effect on sugar companies' profitability in Ethiopia.

HP_7: Debt used has significant negative effect on sugar companies' profitability in Ethiopia.

HP_8: Firm growth rate has significant positive effect on sugar companies' profitability in Ethiopia.

1.5 SIGNIFICANCE OF THE STUDY

First, the paper is intend to investigate if working capital management have effect on the profitability of the sugar manufacturing company's then the finding of the study will have benefit for different participants such as accountants and professionals, financial managers, and policy makers in the sugar manufacturing companies regarding decision on optimum level of working capital, ways of managing it and overall policies on working capital management. And also it gives clear understanding about the relation between working capital components and profitability. Furthermore, the finding of this study initiates the researchers for further studies. Last but not least, this study will serve as a reference for other researchers in related area. Thus, it can minimize the literature gap in the area of study particularly in Ethiopia

1.6 SCOPE AND LIMITATION OF THE STUDY

This study was concerned the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia. In order to undertake this study; only three sugar manufacturing companies were used by the researcher. Namely: Wonji/Shoa sugar factory, Metahara sugar factory, and Fincha sugar factory. This study was limited to the following variables: return on asset account receivable period, account payable period, inventory conversion period, cash conversion period, current ratio, debt ratio, growth rate, and firm size. For the analysis purpose twelve years data from 2002 through 2013 was used for the study. At the end, the limitation of the study is that the researcher was not used qualitative data.

1.7 ORGANIZATION OF THE PAPER

The thesis is organized into five chapters. The first chapter starts with presenting background of the study, statement of the problem, objective of the study, significance of the study and scope of the study. The second chapter focuses on both theoretical and empirical review of related literature. The third chapter deals with the research methodology by comprising Research design, Population and sample, Methods of Data Collection and source of Data and Methods of Data Analysis. The forth chapter give emphasis to the analysis, result, discussion and hypothesis testing of the empirical findings. The thesis report was end at chapter fife by giving conclusion and recommendation.

CHAPTER TWO:

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discussed about the related reviewed literature regarding to working capital management and its effect on profitability. Having this the chapter includes three major sections. The first section discusses about the theoretical aspect or theoretical review that the information obtained from different books followed by the second section dealt about the previous studies conducted around this area that is empirical review and the last section discus literature review and hypothesis development.

2.2 THEORETICAL REVIEW

2.2.1 Overview of working capital

According to Brigham and Houston (2003) the term working capital originated with the old Yankee peddler, who would load up his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or "turned over," to produce his profits. The wagon and horse were his fixed assets. He generally owned the horse and wagon, so they were financed with "equity" capital, but he borrowed the funds to buy the merchandise. These borrowings were called working capital loans, and they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then the bank would make another loan, and banks that followed this procedure were said to be employing "sound banking practices**.**

Working capital can be classified or understood with the help of the following two important concepts.

Gross Working Capital

Gross Working Capital is the general concept which determines the working capital concept. Thus, the gross working capital is the capital invested in total current assets of the business concern. Gross Working Capital is simply called as the total current assets of the concern.

Gross working capital = Total Current Asset

Net Working Capital

Net Working Capital is the specific concept, which considers both current assets and current liability of the concern. Net Working Capital is the excess of current assets over the current liability of the concern during a particular period. According to Ross, Westfield,and Jordan, (2000) Current assets are cash and other assets that are expected to convert to cash within the year. Current assets are presented on the balance sheet in order of their accounting liquidity the ease with which they can be converted to cash and the time it takes to convert them. Four of the most important items found in the current asset section of a balance sheet are cash and cash equivalents, marketable securities, accounts receivable, and inventories Also Current liabilities are obligations that are expected to require cash payment within one year. Three major items found as current liabilities are accounts payable, expenses payable (including accrued wages and taxes), and notes payable.

If the current assets exceed the current liabilities it is said to be positive working capital; it is reverse, it is said to be Negative working capital.

Net Working Capital = Current Asset – Current Liabilities

According to Paramasivan and Subramanian (2008) both excessive and inadequate Working Capital leads to some problems in the business concern this are

A. Causes and effects of excessive working capital.

(i) Excessive Working Capital leads to unnecessary accumulation of raw materials, components, and spares.

(ii) Excessive Working Capital results in locking up of excess Working Capital.

(iii) It creates bad debts, reduces collection periods, etc.

(iv)It leads to reduce the profits.

B. Causes and effects of inadequate working capital

(i) Inadequate working capital cannot buy its requirements in bulk order.

(ii) It becomes difficult to implement operating plans and activate the firm's profit target.

(iii) It becomes impossible to utilize efficiently the fixed assets.

(iv)The rate of return on investments also falls with the shortage of Working Capital.

(v) It reduces the overall operation of the business

2.2.2 Working Capital Management

Working capital management is the most important decisions in knowledge of financial management. The ability of corporate for long term activity related to this subject that financial managers apply optimum management for working capital management (Mousavi&Jari, 2012).

According to Mcmenamin (2005) working capital management is the management of short-term cash flows and liquidity. Working capital management is an act of planning, organizing, and controlling the components of working capital like cash, bank balance inventory, receivables, payables, overdraft, and short-term loans. The main objective of the Working Capital Management is managing the Current Asset and Current Liabilities effectively and maintaining adequate amount of both Current Asset and Current Liabilities. Simply it is called Administration of Current Asset and Current Liabilities of the business concern. Consequently, if financial management is not carried out effectively in the short term there may not be a long term (Paramasivan& Subramanian, 2008).

Working capital management is the administration of the firm's current assets and the financing needed to support current assets. The management of working capital is important for several reasons. For one thing, the current assets of a typical manufacturing firm account for over half of its total assets. For a distribution company, they account for even more. Excessive levels of current assets can easily result in a firm realizing a substandard return on investment. However, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations. For small companies, current liabilities are the principal source of external financing. These firms do not have access to the longer-term capital markets, other than to acquire a mortgage on a building. The fast-growing but larger company also makes use of current liability financing. For these reasons, the financial manager and staff devote a considerable portion of their time to working capital matters. The management of cash, marketable securities, accounts receivable, accounts payable, accruals, and other means of short-term financing is the direct responsibility of the financial manager; only the management of inventories is not. Moreover, these management responsibilities require continuous, day-to-day supervision. Unlike dividend and capital structure decisions, you cannot study the issue, reach a decision, and set the matter aside for many months to come. Thus working capital management is important, if for no other reason than the proportion of the financial manager's

time that must be devoted to it. More fundamental, however, is the effect that working capital decisions have on the company's risk, return, and share price, (Van Horne &Wachowicz, 2008).

2.2.3 Cash Management

Management of the cash flows is the core aspect of management and is very essential in the organization (Owolabi&Alu, 2012).According to Paramasivanand Subramanian (2008) Cash is the money which a business concern can disburse immediately without any restriction. The term cash includes coins, currency, cheque held by the business concern and balance in its bank accounts. Management of cash consists of cash inflow and outflows, cash flow within the concern and cash balance held by the concern etc.

Approximately 1.5 percent of the average industrial firm's assets are held in the form of cash, which is defined as demand deposits plus currency. Cash is often called a "nonearning asset." It is needed to pay for labor and raw materials, to buy fixed assets, to pay taxes, to service debt, to pay dividends, and so on. However, cash itself (and also most commercial checking accounts) earns no interest. Thus, the goal of the cash manager is to minimize the amount of cash the firm must hold for use in conducting its normal business activities, yet, at the same time, to have sufficient cash (1) To take trade discounts,

(2) To maintain its credit rating, and

(3) To meet unexpected cash needs.

REASONS FOR HOLDING CASH

Firms hold cash for different reasons:

- **Transactions Balance**

A cash balance associated with payments and collections; the balance necessary for day-to-day operations.

- **Compensating Balance**

A bank balance that a firm must maintain to compensate the bank for services rendered or for granting a loan.

- **Precautionary Balance**

A cash balance held in reserve for random, unforeseen fluctuations in cash inflows and outflows.

- **Speculative Balance**

A cash balance that is held to enable the firm to take advantage of any bargain purchases that might arise. (Brigham & Houston, 2008)

2.2.4 Inventory Management

Inventories constitute the most significant part of current assets of the business concern. It is also essential for smooth running of the business activities. A proper planning of purchasing of raw material, handling, storing and recording is to be considered as a part of inventory management. Inventory management means, management of raw materials and related items. Inventory management considers what to purchase, how to purchase, how much to purchase, from where to purchase, where to store and when to use for production etc. (Brigham & Houston, 2008)

Inventories, which can include

(1) Supplies

(2) Raw materials

(3) Work in process, and

(4) Finished goods are an essential part of virtually all business operations. Optimal inventory levels depend on sales, so sales must be forecasted before target inventories can be established. Moreover, because errors in setting inventory levels lead to lost sales or excessive carrying costs, inventory management is quite important.

Efficient management of inventories is an essential part of any kind of manufacturing process concern. The major objectives of the inventory management are as follows:

- To efficient and smooth production process.
- To maintain optimum inventory to maximize the profitability.
- To meet the seasonal demand of the products
- To avoid price increase in future.
- To ensure the level and site of inventories required.
- To plan when to purchase and where to purchase
- To avoid both over stock and under stock of inventory, (Paramasivan & Subramanian 2008).

2.2.5 Account receivable management

The term receivable is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business. Receivables are also one of the major parts of the current assets of the business concerns. It arises only due to credit sales to customers, hence, it is also known as Account Receivables or Bills Receivables. Management of account receivable is defined as the process of making decision resulting to the investment of funds in these assets which will result in maximizing the overall return on the investment of the firm. The objective of receivable management is to promote sales and profit until that point is reached where the return on investment in further funding receivables is less than the cost of funds raised to finance that additional credit. The costs associated with the extension of credit and accounts receivables are identified as follows:

A. Collection Cost

B. Capital Cost

C. Administrative Cost

D. Default Cost, (Brigham& Houston, 2008)

Although some sales are made for cash, today the vast majority of sales are on credit. Thus, in the typical situation, goods are shipped, inventories are reduced, and an account receivable is created.12 eventually, the customer pays, the firm receives cash, and its receivables decline. The firm's credit policy is the primary determinant of accounts receivable, and it is under the administrative control of the CFO. Moreover, credit policy is a key determinant of sales, so sales and marketing executives are concerned with this policy. Therefore, we begin our discussion of accounts receivable by discussing credit policy.

- **Credit Policy**

A set of rules that includes the firm's creit period, discounts, credit standards, and collection procedures offered.

- **Credit Period**

The length of time customers has to pay for purchases.

- **Discounts**

Price reduction gives for early payment.

- **Credit Standards**

The financial strength customers must exhibit to qualify for credit.

- **Collection Policy**

Collection Policy is the degree of toughness in enforcing the credit terms; Because of their magnitude any changes in the levels of account receivable will affect profitability." An increase in account receivables that is additional extension of trade credits- not only result in higher sales , also requires additional financing to support the increased investment in account receivables . The cost of credit investigation and collection efforts and the chances of bad debts are increased. (Ebenezer & Asiedu, 2013)

2.2.6 Account payable management

Firms generally make purchases from other firms on credit and record the debt as an account payable. Accounts payable, or trade credit, is the largest single category of short-term debt, representing about 40% of the average corporation's current liabilities. This credit is a spontaneous source of financing in the sense that it arises spontaneously from ordinary business transactions. Account Payables Management refers to the set of policies, procedures, and practices employed by a company with respect to managing its trade credit purchases.

Account payable has to management effectively in the firm because as Raheman and Nasr (2007), states Delaying payments to suppliers allow a firm to assess the quality of bought products, and can be an inexpensive and flexible source of financing for the firm. On the other hand, late payment of invoices can be very costly if the firm is offered a discount for early payment.

2.2.7 Working capital management policy

Working Capital Management formulates policies to manage and handle efficiently; for that purpose, the management established three policies based on the relationship between Sales and Working Capital.

1. Conservative working capital policy: Conservative Working Capital Policy refers to minimize risk by maintaining a higher level of Working Capital. This type of Working Capital Policy is suitable to meet the seasonal fluctuation of the manufacturing operation.

2. Moderate working capital policy: Moderate Working Capital Policy refers to the moderate level of Working Capital maintenance according to moderate level of sales. It means one percent of change in Working Capital that is Working Capital is equal to sales.

3. Aggressive working capital policy: Aggressive Working Capital Policy is one of the high risky and profitability policies which maintain low level of Aggressive Working Capital against the high level of sales, in the business concern during a particular period, (Paramasivan& Subramanian, 2008).

2.3 EMPIRICAL REVIEW

This section reviews the empirical studies on the effects of working capital management on firms' profitability. Some of existing studies conducted in the area are as follows beautiful:

Deloof (2003) investigated the relation between WCM and corporate profitability for a sample of 1,009 large Belgian nonfinancial firms for the year 1992-1996. Number of day's accounts receivable, inventories, and accounts payable are used as measures of trade credit and inventory policies. The cash conversion cycle is used as a comprehensive measure of WCM. The study find a significant negative relation between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms. The results suggest that managers can increase corporate profitability by reducing the number of day's accounts receivable and inventories. Less profitable firms wait longer to pay their bills.

Padachi (2006) examined the trends in working capital management and its impact on `firms' performance. The researcher examined trend in working capital needs and profitability of firms to identify the causes for any significant differences between the industries. The dependent variable, return on total assets was used as a measure of profitability and the relation between working capital management and corporate profitability is investigated for a sample of 58 small manufacturing firms, using panel data analysis. The regression results of the study showed that high investment in inventories and receivables is associated with lower profitability. The findings also revealed that an increasing trend in the short-term component of working capital financing.

On the study of Raheman and Nasr (2007), they selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999 – 2004, they studied the effect of different variables of working capital management including the Average collection period, Inventory turnover in days, Average payment period, Cash conversion cycle and Current ratio on the Net operating profitability of Pakistani firms. Debt ratio, size of the firm (measured in terms of natural logarithm of sales) and financial assets to total assets ratio have been used as control variables. Pearson's correlation, and regression analysis (Pooled least square and general least square with cross section weight models) are used for analysis. The results show that there is a negative relationship between variables of the working capital management and

profitability of the firm. It means that as the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. The study finds that there is a significant negative relationship between liquidity and profitability. They also find that there is a positive relationship between size of the firm and its profitability. There is also a significant negative relationship between debt used by the firm and its profitability.

The objective made by Terueland Solano (2007) was to provide empirical evidence on the effects of working capital management on the profitability of a sample of small and medium-sized Spanish firms. The researchers have collected a panel of 8,872 small to medium-sized enterprises (SMEs) covering the period 1996-2002. The authors tested the effects of working capital management on SME profitability using the panel data methodology. The results, which are demonstrate that there is a significant negative relation between an SME's profitability and the number of day's accounts receivable and days of inventory. The study recommended that managers can create value by reducing their inventories and the number of days for which their accounts are outstanding. Moreover, shortening the cash conversion cycle also improves the firm's profitability.

The study by Nazir andAfza, (2007), investigated the traditional relationship between workingcapital management policies and a firm's profitability. Using the panel data set for the period 1998-2005, the impact of aggressive working capital investment and financing policies has been evaluated using return on assets as well as Tobin's q. Managers can create value if they adopt a conservative approach towards working capital investment and working capital financing policies. The study also finds that investors give weight to the stocks of those firms that adopt an aggressive approach to managing their short-term liabilities.

Kaddumi and Ramadan (2010) assessed the effect of working capital management (WCM) on the performance. Utilizing unbalanced data for a sample of 49 Jordanian Industrial corporations listed at Amman Stock Exchange from the year 2005 to 2009. Using two alternative measures of profitability (Return on asset & operating profitability) as proxy for the performance and five proxies for the Working Capital Management(average collection period (ACP), average age of inventory (AAI), average payment period (APP), cash conversion cycle(CCC) and the net trade

cycle(NTC)), estimation of twenty models panel data cross-sectional time series have been tested employing two regression models; the Fixed-Effects Model and the Ordinary Least Squares Model. The findings of the study found to be significantly consistent with the view of the traditional working capital theory. The results suggest that working capital management and performance are positively correlated. The regression results also concluded that the Jordanian industrial firms follow a conservative investing policy and less aggressive financing policy in the working capital, and a well-efficient managing of the working capital can add value to the shareholders wealth.

The main objective made by Karaduman, Akbas, and Ozsozgun (2010) was to provide some empirical evidence on the effects of working capital management on the profitability for a sample of 140 selected companies listed in the Istanbul Stock Exchange for the period from 2005 to 2008. The panel data methods are employed in order to analyze the mentioned effects. All results for all models are found statistically significant, and the signs of coefficients are same as the ones from the correlation matrix .A company's return on assets is increased by Shortening number of days accounts receivable, accounts payable and number of days of Inventory and reducing cash conversion cycle provides positive contribution to company's return on assets. The estimation results indicate that working capital management is exceptionally vital for a company. When it comes to the control variables; while a company's size has positive effect on profitability, its debt ratio negatively affects its profitability. Moreover, the high values of the coefficients of the real GDP growth rate in Turkey highlight the importance of economic growth regarding companies' profitability.

Mathuva (2011) studied the influence of working capital management components on corporate profitability on Kenyan listed firms. In his study the ACP and leverage are negatively related with the firm's profitability while all other variables exhibit a positive relationship. Negative relationship between APP and profitability, which means more profitable firms wait a longer to pay their bills since they have a greater bargaining power with their suppliers.

Lotfinia, Mousavi, and Jari (2012) investigated the relationship between working capital management and firm characteristics. The study use factors such as firm size, financial leverage, and Q Tobin ratio for evaluating firm characteristics and net liquidity balance as criterion for evaluating of working capital management. For testing the research hypotheses, financial

statements' data of 80 companies accepted in Tehran Stock Exchange has been used and for analyzing and testing hypotheses, Stepwise regression model is used. Research results show that there is positive relationship between working capital management (NLB) and firm size, while there is a negative relationship between working capital management and financial leverage. Moreover, the result show that no relationship between working capital management and Q Tobin.

Soekhoe (2012) conducted a study on the title the effects of working capital management on the profitability of Dutch listed firms. The objective of the study was to establish the relationship between working capital management and profitability over a period of five years for Dutch Listed firms. For this research secondary data is utilized namely the annual reports provided by Dutch Listed companies to the public. The findings of the study shows that there is significant and negative relationship between the profitability of Dutch listed firms and the number of days accounts payables and the number of days accounts receivables. Furthermore, there is a positive and significant correlation between the profitability and the number of day's inventories which indicates that firms with high inventory levels have high profits. The study also results in a positive correlation between the profitability of firms and the cash conversions cycle. However, this finding was statistically insignificant. This study will also give some insight how the working capital in the Netherlands is managed in order to increase profitability.

Arunkumar and Ramanan (2013) analyzed the effect of working capital management on the profitability of manufacturing firms. The data analysis was carried for 1198 manufacturing firms listed in Centre for Monitoring Indian Economy for a period of 5 years. The relationship of debtor's days, inventory days, creditor's days, current ratio, ratio of current liability to total assets, assets turnover ratio, financial assets to total assets, and size with return on assets employed was analyzed in the study. The authors apply correlation analysis and group wise weighted least squares regression analysis to identify the effects of these variables on profitability. The correlation analysis shows that the firms' profitability is highly influenced by the variables relating to assets. The findings of the analysis show a positive relationship between return on assets and debtors' days and inventory days. Creditors' days shows a significant negative relationship with return on assets. The negative relationship between

creditors days and profitability suggest that long number of days of accounts payable leads the firm to a low level of profitability and vice versa.

The study by Ebenezer and Asiedu, (2013), examined the effect of working capital management on the profitability of companies listed on the Ghana Stock Exchange. Secondary data from the Ghana Stock Exchange on manufacturing companies within the Accra metropolis was used to examine whether working capital management influence the profitability of manufacturing companies in the country. The study found out that, the major component of working capital management such as inventory days, account payable and cash conversion cycle have influence on the profitability of manufacturing companies. The study recommended that, manufacturing companies should adopt efficient and effective ways of efficiently managing these components of working capital management. The conclusion indicates that managers of manufacturing companies must employ efficient and effective working capital management practices to ensure the survival of the business.

Kirawa(2013) analyzed the effect of working capital management on firm's profitability in Kenya for the period 2003 to 2012. Balanced panel data of five manufacturing and construction firms listed on the Nairobi Securities Exchange (NSE) is used. Pearson's correlation and Ordinary Least Squares regression models were used to establish the relationship between working capital management and firm's profitability. The study finds a negative relationship between profitability and number of day's accounts receivable and cash conversion cycle, but a positive relationship between profitability and number of days of inventory and number of day's payable. Moreover, the financial leverage, sales growth, current ratio and firm size also have significant effects on the firm's profitability. The study has been concluded that the management of a firm can create value for their shareholders by reducing the number of day's accounts receivable. The management can also create value for their shareholders by increasing their inventories to a reasonable level. Firms can also take long to pay their creditors in as far as they do not strain their relationships with these creditors. Firms are capable of gaining sustainable competitive advantage by means of effective and efficient utilization of the resources of the organization through a careful reduction of the cash conversion cycle to its minimum. In so doing, the profitability of the firms is expected to increase.

The purpose of the study made by Akoto, Vitor, and Angmor (2013) was to examine the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used secondary data collected from all the 13 listed manufacturing firms in Ghana covering the period from 2005-2009. Using panel data methodology, the study finds a significantly negative relationship between profitability and accounts receivable days. However, the firms' cash conversion cycle, current asset ratio, size, and current asset turnover significantly positively influence profitability. The study suggests that managers can create value for their shareholders by creating incentives to reduce their accounts receivable to 30 days. It is further recommended that, enactments of local laws that protect indigenous firms and restrict the activities of importers are eminent to promote increase demand for locally manufactured goods both in the short and long runs in Ghana.

The main purposes made by Anojan, Arulalan, and Nimalathasan (2013), study was to identify significant impact on Working Capital Management (WCM) on profitability and find out the relationship between WCM and profitability of selected listed Beverage, Food and Tobacco Companies in Colombo Stock Exchange (CSE) from the financial year 2008 to 2012. Regression and Correlation analysis were performed in the study. According to the correlation results of this study stated that there is no significant relationship between WCM and profitability of Beverage, Food, and Tobacco companies in Sri Lanka. Debtor's, Creditor's and inventory conversion period have a negative relationship on return on assets as well Creditor Conversion Period (CCP) has a negative relationship with Gross Profit (GP), it means if the CCP arise or increase that will reduce GP of the company. Regression analysis results revealed that there is no significant impact of WCM on profitability of the selected listed Beverage, Food, and Tobacco Companies in Colombo Stock Exchange (CSE). The findings show that WCM has a negative relationship Return on Assets (ROA) of the companies, the study recommended that managers need to maintain or keep their working capital components at an optimum level to achieve their expecting profitability of the firm and competitive advantage in the market

Akinlo (2013) examined the relation between working capital management and profitability for a sample of 66 Nigerian non-financial firms for the period 1997–2007. Trade credit policy and inventory policy are measured by number of day's accounts receivable, accounts payable and

inventories and the cash conversion cycle (CCC) is used as a comprehensive measure of working capital management. The results suggest that firm's profitability is reduced by lengthening the number of day's accounts receivable, number of days of inventory and number of days accounts payable. The result shows that shortening the CCC improves the profitability of the firms.

Rehman (2013) examined the impact that the running assets management on the profitability of Pakistan cement sector. Moreover, the study outlines the main factors that basically determine the working capital in the financials of Pakistan cement sector. To manage firm's liquid assets which is working capital management and to reach a desire equilibrium level among profitability and risk, figures was collected from Annual Reports and sample consist of 10 Pakistani cement Companies listed at KSE from 2003-2008. The association between working capital management and profitability is examined with correlation; regression analysis the result proved that there is inverse and positive association between working capital management and profitability in cement industry of Pakistan.

Osundina (2014) investigated the relationship between working capital management measured by Aggressive Investment Policy (AIP), Account Collection Period (ACP), Inventory Conversion Period (ICP), Average Payment Period (APP), Cash Conversion Cycle (CCC), and Net Operating Profit of quoted food and beverages manufacturing firms in Nigeria. Survey research design was employed using primary data. Regression analysis (OLS) was used to establish the relationship. It was found that Working capital management had significant positive relationship with profitability; Cash conversion cycle and Aggressive investment policy had insignificant positive relationships with profitability. Account collection Period had significant negative relationships with profitability; Inventory Conversion Period and Account Payment Period had insignificant negative relationship with profitability. Then it was recommended that management of food and beverages manufacturing firms in Nigeria should be more efficient in the management of working capital by reducing their cash conversion cycle. If days of cash conversion are reduced, profitability will improve. Food and beverages manufacturing firms in Nigeria should shift from moderate investment policy to aggressive investment policy. This step will help to improve the profitability of this sector. There should be

a reduction in the average collection period of food and beverages manufacturing firms in Nigeria in order to increase their profitability.

The main purpose made by Zawaira and Mutenheri (2014)was to determine the impact of different components of working capital management on profitability of firms listed on the Zimbabwe Stock Exchange during the dollarization era. A random effects model was estimated using company financial data for the period 2010-2012. These data were obtained from the Central African Stock Exchanges Handbooks. Thirty two companies listed on the Zimbabwe Stock exchange had usable data and therefore the random effects model was estimated using data from 32 non-financial companies listed on the Zimbabwe Stock Exchange. The regression results show that profitability was not associated with receivables collection period, inventory conversion period, cash conversion cycle, quick ratio, current asset to total asset ratio, current liabilities to total asset ratio, debt ratio and age of company. However, a negative and significant relationship between payables deferral period and profitability was found. In addition, liquidity and size were found to enhance profitability of firms. The study suggested that Following the findings of this study, Zimbabwean firms can enhance their profits by shortening the amount of time they take to pay their suppliers. This will allow firms to take advantage of trade credit policies offered by their suppliers, which can help reduce costs and enhance returns. There is also need for firms in Zimbabwe to pay close attention to their current assets investments.

The study aimed by Ponsian, Chrispina, Tago,andMkiibi (2014) was to examine the statistical significance between company's working capital management and profitability. In light of this objective the study adopts quantitative approaches to test a series of research hypotheses. A sample of three (3) manufacturing companies listed on the Dares Salaam Stock Exchange (DSE) is used for a period of ten years (2002-2012) with the total of 30 observations. Data is analyzed on quantitative basis using Pearson's correlation and Regression analysis (Ordinary Least Square). The key findings from the study are; Firstly, there exists a positive relationship between cash conversion cycle and profitability of the firm, managers can create a positive value for the shareholders by increasing the cash conversion cycle to a reasonable level; Secondly, there is a negative relationship between liquidity and profitability. Thirdly, there exists a highly significant negative relationship between average collection period

and profitability. Fourthly, there is a highly significant positive relationship between average payment period and profitability and Fifthly, there exists a highly significant negative relationship between inventory turnover in days and profitability hinting that firms which maintain sufficiently low inventory levels reduce the cost of storing the inventory which results to higher profitability.

Agha (2014) empirically tested the impact of working capital management on profitability and investigate this relationship between these two, the author collected secondary data from Glaxo Smith Kline pharmaceutical company registered in Karachi stock exchange for the period of 1996-2011. The study use return on assets ratio to measure the profitability of the company and account receivable turnover, creditor's turnover, inventory turnover, and current ratio as working capital management criteria. The results of the research show that there is a significant impact of the working capital management on profitability of company. Therefore, managers may enhance the profitability of their firms by minimizing the inventory turnover, account receivables ratio and by decreasing creditors turnover ratios but there is no significant effect of increasing or decreasing the current ratio on profitability. So, the results indicate that through proper working capital management the company can increase its profitability. The study also suggests that the study will benefit the Pharmaceutical companies in the management of their working capital in such an efficient manner so that they can multiply their profitability.

Muhammad, Jibril, Wambai, Ibrahim, and Ahmad (2015), examined the impact of working capital management on corporate profitability through the periods of 2008 to 2012. The total of seven firms listed on the floor of the Nigerian Stock Exchange was studied, using secondary data generated from annual reports and accounts of the sampled companies and the Nigerian Stock Exchange Fact book. The data were analyzed by means of descriptive statistics and GLS regression analysis using STATA 11. The study finds a positive relationship among Average Collection Period (ACP), Current Ratio (CR) and the size of the firm (LOGSIZE) with Profitability and a negative relationship with Inventory Turnover Period (ITP), Average Payment Period (APP). The paper therefore recommends that cash collected should be re-invested into short-term investment to generate profits and fund left idle in the cash or excessive liquidity is costly and do not lead to profitability.

All the above studies provide a solid base and give idea regarding working capital management and its components. They also give the results and conclusions of those researches already conducted on the related area for different countries and environment from different aspects.

2.3.1 Review of previous studies on Ethiopia

Abera (2007) examined the effect of working capital investment and financing policies on firms' profitability by using audited financial statements of a sample of 11 manufacturing private limited companies in Tigray region, Ethiopia for the period of 2005 to 2009. The study used return on assets, return on equity and operating profit margin as dependent profitability variables. Accounts receivable period, inventory holding period and accounts payable period are used as independent working capital investment policy variables. Moreover, cash conversion cycle and current assets to total assets ratio are used as comprehensive measures of working capital investment policy. On the other hand, current liabilities to total assets ratio is used as measure of working capital financing policy. The two traditional measures, current ratio and quick ratio, are used as liquidity indicators. The results show that longer accounts receivable and inventory holding periods are associated with lower profitability. There is also negative relationship between accounts payable period and profitability measures; however, except for operating profit margin this relationship is not statistically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant relationship between current assets to total assets ratio and profitability measures has been observed. On the other hand, findings show that a highly significant positive relationship between current liabilities to total assets ratio and profitability. Finally, negative relationships between liquidity and profitability measures have also been observed. Managers, therefore, can increase firms' profitability by improving the efficiency of management of working capital investment and financing policies while, also keeping in view the trade-off between liquidity and profitability.

The study carried out by Mohammed (2011),examined the effect of working capital investment and financing policies on firms' profitability by using audited financial statements of a sample of 11 manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2005 to 2009. The study used return on assets, return on equity and operating profit margin as dependent profitability variables. Accounts receivable period, inventory holding period and

accounts payable period are used as independent working capital investment policy variables. Moreover, cash conversion cycle and current assets to total assets ratio are used as comprehensive measures of working capital investment policy. On the other hand, current liabilities to total assets ratio is used as measure of working capital financing policy. The two traditional measures, current ratio and quick ratio, are used as liquidity indicators. In addition, the study used firm size as measured by logarithm of sales, firm growth rate as measured by change in annual sales, financial leverage and annual GDP growth rate as control variables. Both correlation analysis and pooled panel data regression models of cross-sectional and time series data were used for analysis. The results show that longer accounts receivable and inventory holding periods are associated with lower profitability. There is also negative relationship between accounts payable period and profitability measures; however, except for operating profit margin this relationship is not statistically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant relationship between current assets to total assets ratio and profitability measures has been observed. On the other hand, findings show that a highly significant positive relationship between current liabilities to total assets ratio and profitability. Finally, negative relationships between liquidity and profitability measures have also been observed. Managers, therefore, can increase firms' profitability by improving the efficiency of management of working capital investment and financing policies while, also keeping in view the trade-off between liquidity and profitability.

The study aims by Mekonnen (2011) was to examine the statistical significance between firms' working capital management and profitability. In light of this objective the study adopted quantitative method of research approaches to test a series research hypothesis. Specifically, the study used survey of documentary analysis of companies' audited financial statements. Stratified sampling design was employed based on nature and turnover of companies. Then companies were selected based on simple random sampling method from each stratum's to avoid biases and represent firms from each sub classification (stratum's) within manufacturing companies. Consequently, the study selected a sample of thirteen (13) companies for the period of five years (2005-2009) with the total of 65 observations. Data was then analyzed on quantitative basis using Pearson's correlation and OLS regression analysis. The results showed

that there is statistical significance negative relationship between profitability and working capital management. Also the study suggests that company's managers can create profits or value for their companies and shareholders by handling correctly the cash conversion cycle and keeping each different component of working capital to a possible optimum level. The researcher found that there is a significant negative relationship between liquidity and profitability. Moreover the study finds that there is significance positive relationship between size and firm profitability. Unlike, the study found that there is no statistically significance negative relationship between debt used and firms profitability.

The purpose of the study made by Vallalnathan and Joriye (2012) was to investigate the impact of WCM on the profitability of cooperative unions in East Showa, Ethiopia. The quantitative research approach was employed to accomplish the objectives of this study. The secondary data were collected from eight sample cooperative unions in East Showa, Ethiopia that fulfill the criteria of the data availability from the financial statement of the unions during the period from1999-2003 Ethiopian Calendar (E.C.). Random effect multiple regression models was used to analyses the panel data for the standard determinants of working capital. The results showed that Average Collection Period (ACP) has a negative effect on the profitability of the unions. The results from regression Inventory Turnover Period (ITP) has a positive effect on the profit of the unions and also revealed that the comprehensive measure of WCM i.e. Cash Conversion Cycle (CCC) showed a positive effect on the profitability. The regression results also indicated that there was a positive relationship between liquidity, which was measured by Current Ratio (CR), and profitability of the unions. The results showed a significant positive relationship between the size of the unions and its profitability and a positive relationship between debt used by the cooperative unions and its profitability. The results also delivered some insights on the impact of WCM on profitability of the unions in East Showa zone, Ethiopia. This could be intended to encourage and create conducive environment for cooperative unions to use working capital as a viable source of finance in order to meet their noble objectives.

Mengesha (2014) examined the impact of working capital management on firm's performance by using audited financial statements of a sample of 11 metal manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2008 to 2012. The performance measured

in terms of profitability by return on total assets, and return on investment capital as dependent financial performance (profitability) variables. The working capital was determined by the Cash conversion period, Accounts receivable period, inventory conversion period and accounts payable period are used as independent working capital variables. Moreover, the traditional measures, current ratio are used as liquidity indicators, firm size as measured by logarithm of sales, firm growth rate as measured by change in annual sales and financial leverage as control variables. The data was analyzed using SPSS, estimation equation by both correlation analysis and pooled panel data regression models of cross-sectional and time series data were used for analysis. Results indicate that longer accounts receivable and inventory holding periods are associated with lower profitability. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant relationship between cash conversion cycle, account receivable period, inventory conversion period and account payable period with return on investment capital has been observed. On the other hand, findings show that a highly significant negative relationship between account receivable period, inventory conversion period and account payable period with return on asset. The results conclude that cash conversion cycle has significant negative relationship with return on asset. Finally the study suggest that paying suppliers longer and collecting payments from customers earlier, and keeping product in stock less time, are all associated with an increase in the firms performance. Managers, therefore, can increase firms‟ profitability by improving the performance of management of working capital components.

2.3.2 Conclusion and knowledge gap

From the result of literature review there is ambiguity regarding the appropriate variables as well as on the direction of the effect of different components on profitability.

Negative and significant effect of account receivable period, inventory conversion period and account payable period on profitability is found by Deloof (2003);Raheman and Nasr (2007); Karaduman et al. (2010); Garcia and Toenel(2011); Akinlo(2013);Kirawa(2013); andAgha (2014). Other researchers like Mathuva(2011);Kirawa(2013);and Muoki (2013) found positive effect of average collection period and average payment period with profitablity. Also Kaddumiand Ramadan(2010);Mathuva(2011) andSoekhoe(2012)found a positive and

significant effect of number of day's inventories on profitability. Accordingly a study conducted by Osundina (2014) found that profitability significantly and negatively affected by Account receivable Period; Inventory Conversion Period and Account Payment Period had insignificant negative effect on profitability. Furthermore Muhammad et al (2015) founds a positive effect of Average Collection Period with Profitability and a negative effect of Inventory Turnover Period and Average Payment Period with profitablity. Unlike from this on Anojan et al. (2013), study Regression analysis results revealed that there is no significant effect of WCM on profitability of the selected listed Beverage, Food, and Tobacco Companies in Colombo Stock Exchange (CSE).

From the review of the similar relevant literature relating to the effect of working capital on firm profitablity in Ethiopia Some study found negative effect of account receivable period, account payable period, inventory conversion period on firm's profitability (Mekonnen, 2011; Mengesha, 2014; Abera, 2007 and Mohamed, 2011) and others studies (Vallalnathan & Joriye, 2012) shows Positive effect of inventory turnover period on firm's profitability. The above listed finding shows that there is different effect direction between variables of working capital management and firm's profitability.

A lot of literatures are developed to examine the effect of working capital on firm profitablity but those studies show different and contradictory to one another. This shows that there is no harmony in the literature on the effect of working capital on firm profitablity from this the study conducted this research based on the inconsistencies in outcome of different researchers. The study tries to include appropriate variables and unlike other studies the paper examined 12 year data and implement appropriate method. Finally the researcher believed that, the arrangements would fill the gap identified in thus study.

2.4 MEASUREMENTS OF WORKING CAPITAL MANAGEMENT AND HYPOTHESIS DEVELOPMENT

2.4.1 Cash conversion period (CCP) and profitability

A popular measure of Working Capital Management (WCM) is the cash conversion cycle (Deloof, 2003), i.e. the time lag between the expenditure for the purchases of raw materials and the collection of sales of finished goods. In theory CCP can be shortened first by reducing inventory conversion period by processing and selling goods more quickly. Secondly, by reducing receivables collection period through speeding up collections and finally, by lengthening the payables deferral period through slowing down the firm's own payments. Therefore, to the extent that these actions can be taken without increasing costs or depressing sales, it increases firm's profitability furthermore it is significant for every manufacturing company since it helps the financial managers to figure out the inventory holding period as reflected by the total number of days the cash of a company remains blocked in to the business operations cycle starting from the manufacturing of inventory till selling of that inventory (Anser&Malik, 2013).

The longer this time lag, the larger the investment in working capital. A longer cash conversion cycle might increase profitability because it leads to higher sales. However, corporate profitability might also decrease with the cash conversion cycle, if the costs of higher investment in working capital rise faster than the benefits of holding more inventories and/or granting more trade credit to customers (Deloof, 2003).

According to Eljelly (2004) a shorter cash cycle or gap is desirable since the larger the cash cycle or gap the greater the need for external financing and the greater the financing costs to be borne in form of explicit interest costs or implicit costs of other financing sources, such as equity. On the other study by Osundina (2014) on the management of food and beverages manufacturing firms in Nigeria should be more efficient in the management of working capital by reducing their cash conversion cycle in order to have improved profitability.

On Ebenezer and Asiedu (2013) study result show that cash conversion cycle has positive but insignificant effect on profitability of the manufacturing firms in the Accra Metropolis in Ghana. Moreover Raheman and Nasir (2007) study effects of working capital management on liquidity and profitability on a selected sample of 94 Pakistani firms listed on Karachi Stock

Exchange for a period of 6 years from 1999 – 2004, the result show when the cash conversion cycle increases it will lead to decreasing profitability of the firm, and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. As the same study by Lazaridis andTryfonidis (2006) find the negative relationship between cash conversion cycle and profitability measured by gross operating profit. The researchers explain this negative result as shorter cash conversion cycle will generate more profit for a company.

Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_1: Cash conversion period has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.2 Account Receivable Period (ARP) and profitability

The ARP represents the average length of time that the firm must wait after making a sale before receiving cash(Brigham & Houston, 2008). A study done on working capital management and profitability of 13 listed manufacturing firms in Ghana, covering the period from 2005-2009, finds a significantly negative relationship between profitability and accounts receivable days (Akoto et al., 2013).

Soekhoe (2012) study the effects of working capital management on the profitability of Dutch listed firms and conclude that the profitability of Dutch firms is improved when the management reduces the number of day's accounts receivables. By shortening the number of days accounts receivables cash can be generated faster in order to execute more company activities and thus increase the profitability. Consequently, firms with more profits will lead to more accounts receivables because the firms with higher profits have more cash can give more credit to their customers.

Accordingly Teruel and Solano (2007) examined effects of working capital management on profitability of 8,872 small and medium enterprises (SMEs) in Spain for the period from 1996 to 2002, the correlation matrixes demonstrate that the return on assets has the significant negative relationship with number of day's accounts receivable. On the other study of Mathuva

(2011) and Kirawa (2013) found a significant positive relationship between account receivable period and profitablity.

Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_2: Accounts receivable has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.3 Inventory conversion period (ICP) and profitability

The inventory conversion period indicates the time of a product between entering the firm as raw materials, and the moment of selling the product (Soekhoe, 2012). Deloof (2003) found a significant negative relation between gross operating income and number of day's inventories. This explains that an increase of the inventories is an affect from a decrease in sales which leads to lower profit for the companies. Other study made by Vallalnathan and Joriye (2012) shows Positive relationship between, inventory turnover periods with firm's profitability.

Furthermore Kaddumi and Ramadan (2010);Mathuva (2011);and Soekhoe (2012)found a positive and significant correlation between the profitability and the number of day's inventories, this mean an increase in day's inventory will lead to increase profitablity. Also ZawairaandMutenheri (2014) found positive but insignificant effect of profitablity by inventory conversion period.

Based on the previous studies the following hypotheses are identified:

HP_3: Inventory holding period has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.4 Account payable period (APP) and profitability

The study by Soekhoe (2012) states that there is a negative correlation between the firm profitability and the number of days accounts payables. This result is in theory contradictory because when firms wait longer to pay bills to suppliers they have more reserves left in the working capital with which they can execute more activities in order to increase the profitability. According to Deloof (2003), delaying payments to suppliers allows a firm to assess the quality of the products bought, and can be an inexpensive and flexible source of

financing for the firm. On the other hand, late payment of invoices can be very costly if the firm is offered a discount for early payment. On Arunkumar and Ramanan (2013) study Creditors' days has a significant negative effect on return on assets. The negative effect suggests that long number of days of accounts payable leads the firm to a low level of profitability and vice versa.

According to Mengesha (2014) study average payment period has negative effect on metal manufacturing firms' profitability. It indicates that when metal manufacturing firms' in Addis Ababa pays their account payables or bills late there will be decrease profitability. However, the researcher recommended that even if let payment have its own advantage to increase the profitability of the firm. Metal manufacturing Firms' have to pay their debts on time that not losing their venders in the long run.

Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_4: Accounts payable period has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.5 Liquidity and profitability

Liquidity and profitability are the essential concerned area of company's management; Working capital management therefore aims at maintaining a balance between liquidity and profitability while conducting the day-to-day operations of a business concern. According to Deloof (2003) there is a tradeoff to be made between liquidity and profitability when managing the working capital. However, liquidity and profitability are two sides of the same coin because they work in opposite directions (Zawaira & Enard Mutenheri, 2014). Efficient working capital management leads to improve the operating performance of the business concern and it helps to meet the short term liquidity (Paramasivan & Subramanian, 2009). Eljelly (2004) also reports significant negative relationship between the liquidity level and profitability in companies similarly, firms with high liquidity of working capital may have low risk and low profitability. Conversely, a firm that has low liquidity of working capital faces high risk which results to high profitability (Makori & Jagongo, 2013).

Raheman and Nasr (2007) suggest that a company has to determine the equilibrium between liquidity and profitability because increasing profits at the expense of the liquidity of the firm

can be harmful in terms of insolvency and bankruptcy of the firm and their study find that there is a significant negative relationship between liquidity and profitability. Most of the time, liquidity goals of a firm is to have adequate cash to pay for its bills; to make large unexpected purchases and finally, firm has an adequate cash reserve to meet emergencies in all time. Whereas, profitability goal on the other hand requires that, funds of a firm are used so as to yield higher returns. Therefore, when one increases, the other decreases (Brigham & Houston, 2003).

Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_5: Liquidity has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.6 Firm size (FS) and profitablity

The working capital requirements of a firm are basically influenced by the nature and size of the business. Size of the firm may be measured in terms of the scale of operations. A firm with larger scale of operations needs more working capital than a small firm (Mekonnen, 2011). On Eljelly (2004) study the size variable is found to have significant effect on profitability at the industry level. According to Sokhoe(2012) bigger firms generate higher profits than smaller firms. This can be explained by the economies of scale. Bigger companies have more funds to give credit to customers and have high inventories hence generate more profits. The firm size will be determined by the natural logarithm of sales.

Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_6: Firm size has significant positive effect on sugar companies' profitability in Ethiopia.

2.4.7 Debt used and profitability

The way that managers are financing their business affects profit of the firm because it has its own impact by the means of interest and other charges. Total debt to total assets ratio was used as a proxy for Financial Leverage (FL) Abera (2010).In all time internal and external finance are not perfectly substitutes in practice. External finance, like debt may be more expensive than internal finance because of market imperfections. In these circumstances, a firm's investment

and financing decisions are interdependent. Firms may have a target cash conversion cycle as a measure of working capital which balances costs and benefits and hence, maximizes the value for the firm. For this reason, the cost of the funds invested in the cash conversion cycle is higher in firms with a larger leverage, because they have topay a higher interest charges. Therefore, it is possible to anticipate a negative relationship between leverage ratio and profitabilityMekonnen (2011). According to Deloof (2003) when leverage of the firm increases; it will adversely affect its profitability while financial debt ratio used as a proxy for leverage.
Based on the previous studies done by researchers the following hypotheses are identified:

HP_7: Debt used has significant negative effect on sugar companies' profitability in Ethiopia.

2.4.8 Firm growth rate and profitablity

Growth rate is the percentage change in sales from one year to another. Companies experiencing high sales growth rate need to have efficient working capital management to finance such growth Naser, Nuseibeh & AL-Hadeya (2013).The use of growth as a measure of firm performance is generally based on the belief that growth is a precursor to the attainment of sustainable competitive advantages and profitability (Markman, 2002). In addition, larger firms have higher rates of survival (Aldrich 1986), and may have the benefits of associated economies of scale. In the early empirical literature, a number of manufacturing studies find either no relationship or a positive relationship between growth rates and profitablity.
Company with high growth rate tend to pay more attention to manage their working capital by lengthen their payment term and speed up their collection from customers which lead to efficient working capital management (Jeng-Ren, et al., 2006). According Naser et al. (2013) study the result of the analysis revealed that the effectiveness of working capital management of the companies is influenced by sales growth.
Based on the previous studies done by researchers in which they determine how the working capital components in firms affect the profitability, the following hypotheses are identified:

HP_8: Firm growth rate has significant positive effect on sugar companies' profitability in Ethiopia.

2.5. CONCEPTUAL FRAMEWORK FOR ANALYSIS

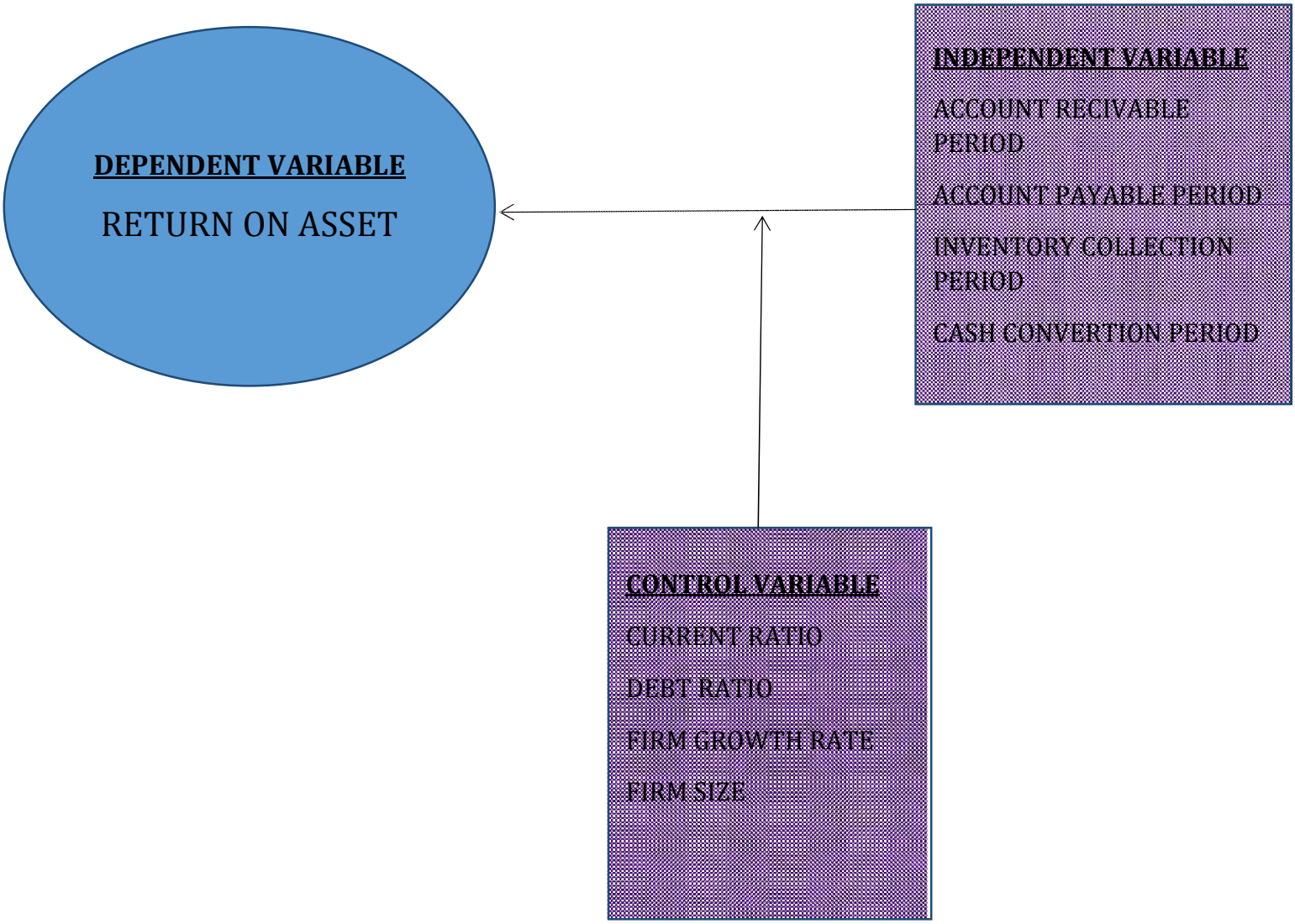

Figure: 2.1. Conceptual framework of the study

Source - researchers own

The above conceptual frame work of the study reveals that the dependent, independent & control variables. Variable used as a dependent variable is return on asset independent variables are account receivable period, account payable period, inventory conversion period, cash conversion period and control variables are current ratio, quick ratio, debt ratio, growth rate, and firm size.

CHAPTER THREE:

METHODOLOGY OF THE STUDY

3.1 INTRODUCTION

In this chapter, the study concentrates on the methodology that is adopted throughout the study. It includes the research design proposed to analyze the effect of working capital management on Ethiopian sugar companies profitability, the type of population and data used and the type of sampling design employed to collect the data, the methods to be employed to run the data and the model specifications.

3.2 RESEARCH DESIGN AND APPROACH

According to Kothari (2004) a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure, To achieve the objective of this study, Explanatory research design was adopted Saunders, Lewis, and Thornhill (2007) suggest an explanatory study type of research design for those researches that establish cause and effect relationship between variables. Therefore, since this study examines the effect of working capital management on profitability it is an appropriate design. Besides, this study uses quantitative research approach to examine a stated objective. According to Kothari (2004) quantitative research approach involves the generation of data in quantitative form which can be subjected to quantitative analysis in a formal and rigid fashion.

3.3 POPULATION AND SAMPLE

Target populations of the study are all sugar manufacturing companies in Ethiopia. According to Fair trade Foundation (2013) Sugar Industry in Ethiopia plays vital role in economic growth. The economy which has a profitable sugar sector is better able to contribute to the stability of the economy. Sugar industry profitability are paramount important to the healthiness of Agro-industry in specific and Ethiopian economy at large. Sugar is one of the most important commodities, and is produced and consumed around the world. Due to its wide importance in different sectors the demand for sugar is very huge in the domestic as well as international markets. For many countries, sugar is one of the most important sources of national income and

is of great economic importance. The sugar companies that found in Ethiopia are WonjiShoa Sugar Facory, Metehara Sugar Factory, Finchaa Sugar Factory, Tendaho Sugar Factory, ArjoDediessa Sugar Factory, Kessem Sugar Factory.

The data for the study period of twelve years from 2002 – 2013 was collected from secondary sources i.e. audited financial statements of the companies. The reason for restricting to this period is that the latest data for investigation was available for these periods; by maintain restriction criterion those companies whose data was not available for the entire study period was excluded from the population therefore the study only include three (3)sugar manufacturing companies. These are; Wonji/Shoa sugar factory, Methara sugar factory, and Fincha sugar factory.

3.4 SOURCE OF DATA AND DATA COLLECTION INSTRUMENT

To achieve the objective the study uses panel data of sugar companies for twelve years from 2002-2013. Panel data which combine the features of both time series and cross sectional data. According to Shah and Khan (2007),panel data follows a given sample of individuals over time, and thus provides multiple observations on each individual in the sample. They also noted that panel data provides information on a number of statistical units for a number of years. Furthermore, they noted that "panel data usually provides the researcher a large number of data points, increasing the degree of freedom and reducing the collinaerity among explanatory variables and therefore, it improves the efficiency of econometric efficiency". Also according to Brooks (2008), the major benefits of using penal data is, more useful in studying the dynamics of adjustment, and it is better able to identify and measure effects that are simply not detectable in pure cross-sections or pure time series data. Moreover, many variables can be more accurately measured at the micro level and biases resulting from aggregation over firms or individuals are eliminated.

Accordingly, the study use secondary sources of data. According to Zikmund (2003), Secondary data means data that gathered and recorded by someone else prior to the current need of the researchers. Secondary data was obtained from audited financial statements, i.e. balance sheet and income statement of the companies and the data was collected from each sugar manufacturing companies.

3.5 METHODS OF DATA ANALYSIS

As noted by Kothari (2004) data has to be analyzed in line with the purpose of the research plan after data collection. Accordingly, secondary data will analyze to determine its suitability, reliability, adequacy, and accuracy. Analysis of data was undertaken to show the effects of explanatory variables in the dependent variable. Data analysis was carry out based on descriptive analysis, correlation analysis and regression analysis.

The descriptive statistics explores and present an overview of all variables used in the analysis. Mean, minimum, maximum, and standard deviation values were used to analyze the general trends of the data from 2002 to 2013 for the variables which included in the study.

The Pearson correlation analysis shows how variables are related with each other. The results of this analysis represent the direction of the correlation of the variables.

The linear regression analysis was used to examine the effects ofexplanatory variables on the profitability of Ethiopian sugar manufacturing companies. According to Brooks (2008) Regression is concerned with describing and evaluating the relationship between a given variable and one or more other variables\

Then the collected data was processed and run using SPSS 20 & STATA 12 to be able to analyze and interpret. The output generated by this software was presented by different tools.

3.6 DESCRIPTION OF VARIABLES

To examine the effects of working capital management on the sugar company's profitability the researcher specify some variables that indicate working capital management and profitability. These variables divided in to dependent variable, independent variable, and control variable.

Dependent Variable

The profitability is the dependent variable and was measured by the Return on asset (ROA).

- **Return on asset**

The study was taking ROA as dependent variable. It is attempting to measure the overall return the firm is generating on the amount of money invested in its assets(Brigham & Houston, 2008).The reason for choosing this variable is that the ROA represents the ratio of how much a

firm has earned on its asset base (Melicher & Leach, 2009) and I tindicates how effectively the assets are managed to generate revenue besides profitablity is best measured by ROA (Tan et al. as cited in Abebe, 2014) and according to Padachi (2006) ROA is a better measure since it relates the profitability of the company to the asset base. ROA has been used as dependent variable by Karaduman et al, 2004;Teruel and Solano, 2007; Padachi, 2006;Abera, 2010; Kaddumiand Ramadan, 2010;Karaduman, Akbas, & Ozsozgun, 2010; Soekhoe, 2012; Arunkumar and Ramanan, 2013; Makori, 2013; and Hina, 2014.To establish a true relationship between the operating "success" or "failure" of firms and working capital policies and to avoid the effect of tax incentives (if available), Earning before Interest and Tax (EBIT) was used as a base to calculate return on assets, (Abera, 2010; Teruel & Solano, 2007;Mengesha, 2014; and Makori, 2013).

$$\boldsymbol{ROA = \frac{Earning\ befor\ interest\ and\ tax}{total\ asset}}$$

Independent variable

The working capital measure by the Cash conversion period (CCP), Accounts receivable period (ARP), inventory conversion period (ICP) and accounts payable period (APP).

➢ Cash conversion period (CCP)

The cash conversion period is a popular measure of the working capital management. It measures the number of days in average between the purchases of raw material until the firm receives money for their finished sold product (Deloof, 2003). The reason to choose the CCP is because, according to Tereul and Solano (2007), the decision of how much to invest in customer and inventory accounts, and how much credit to accept from suppliers are reflected in the CCP. This measure is determined by the following equation

$$\boldsymbol{CCP = account\ recievable\ period + inventory\ conversion\ period - account\ \ payable\ period}$$

➢ Accounts receivable period (ARP)

Also called the "average collection period" (ACP) is used to appraise accounts receivable, and it is calculated by dividing accounts receivable by average daily sales to find the number of days' sales that are tied up in receivables. Thus, the average collection period represents the average length of time that the firm must wait after making a sale before receiving cash, which is the average collection period (Brigham & Houston, 2008).

$$\textbf{Accounts receivable period} = \frac{\textbf{Recivables}}{\textbf{Average sales per day}}$$

Or

$$\textbf{Days sales outstanding} = \frac{\textbf{Receivables}}{\textbf{Annual sales}/365}$$

➢ Inventory conversion period (ICP)

Also called Average number of days inventory. Inventory conversion period tells how quickly, on average, inventory goes from being purchased to being sold. This calculation is important because it helps a business owner understand how quickly needs to purchase new inventory. It is also important because it is part of the cash conversion cycle. Inventory conversion period calculated by dividing inventory to cost of goods sold per day (Brigham & Houston, 2009).

$$\textbf{Inventory conversion period} = \frac{\textbf{Inventory}}{\textbf{Cost of goods sold per day}}$$

Or

$$\textbf{Inventory conversion period} = \frac{\textbf{Inventory}}{\textbf{Cost of goods sold }/365}$$

➢ Accounts payable period (APP)

Accounts payable payment period measures the average number of days it takes an entity to pay its suppliers also examines the relationship between credit purchases and payments for them. To calculate this ratio, the average accounts payable are divided by the average daily cost of sales

in the period. The average cost of sales can be determined by dividing the cost of sales for the period (e.g., a year) by the number of days in the period (Brigham & Houston, 2008)

$$\textbf{Average number of days accounts payable} = \frac{\textbf{accounts payable}}{\textbf{purchase per day}}$$

Or

$$\textbf{Average number of days accounts payable} = \frac{\textbf{accounts payable}}{\textbf{cost of good sold /365}}$$

The control variables

Other variables besides the independent and the dependent variables that may affect the profitability of a firm are the control variables such as Current ratio, Debt ratio, Firm growth rate, and firm size. The reason for choosing these variables is because they are inherent firms characteristics which can also affect company profitablity in addition to the effects of independent variables and the other reason is that most of researchers (Deloof, 2003; Teruel& Solano, 2007; Nazir&Afza, 2009; Raheman& Nasr, 2007; and Shin &Soenen, 1998) have used these to calculate the effect of WCM on profitability in various areas.Further described as follows

- **Current ratio**

Which is a traditional measure of liquidity is calculated by dividing current assets by current liabilities (Raheman& Nasr, 2007).

$$\textbf{Current ratio} = \frac{\textbf{current Asset}}{\textbf{current liabilities}}$$

- **Debt ratio (Leverage)**

Debt Ratio (leverage) shows the how much of the firm's assets is financed by external debt. In case the financial charges due to external financing is larger than the earnings before interest and taxes, the firm can incur great losses (Soekhoe, 2012). Debt ratio is one part of financial ratio which is used for debt management used by different company. Hence, it is ratio that

indicates what proportion of debt a company has relative to its assets. The measure gives an idea to the leverage of the company along with the potential risks the company faces in terms of its debt-load (Fabozzi& Peterson, 2003).To keep the debt utilization effect constant debt to asset ratio is taken as control variable; it is calculated by dividing total debt by total assets.

$$\boldsymbol{Leverage = \frac{Total\ Debt}{Total\ Assets}}$$

- **Firm Size**

On Eljelly (2004) study the size variable is also found to have significant effect on profitability at the industry level. The firm size will be determined by the natural logarithm of sales. Researchers who have used this variable as control variable on their study are: (Deloof, 2003; Karaduman et al 2004; and Soekhoe, 2012).

$$\boldsymbol{Size\ of\ firm\ =\ Natural\ Logarithm\ of\ Net\ Sales}$$

- **Firm Growth Rate (FGR)**

The firm growth rateis measured by variation in its annual sales value with reference to previous year's sales [(Sales $_t$– Sales t – 1)/Sales t – 1] (Afza&Nazir, 2009). Firm growth rate used as a control variable by different researchers,(Deloof, 2003;Teruel and Solano, 2007;and Padachi, 2006).

$$\textbf{Sales growth} = \frac{\textbf{This year's sales} - \textbf{previous year's sales}}{\textbf{previous years sales}}$$

3.7 MODEL SPECIFICATION

Since the study seeks to examine the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia over twelve year period, the study uses panel data regression analysis of cross-sectional and time series data. The effect of working capital management on manufacturing companies was estimated by using similar quantitative models of Delof (2003); Raheman and Nasr (2007); Senand Oruc (2009);and Kaddumi and Ramadan (2010). The general formula used for the model is:

$$Yi = \beta 0 + \sum \beta i Xi + \varepsilon i$$

Where

Yi are the i^{th} observation of dependent variable (ROA)

β_o is the intercept of equation

$\beta_i$are coefficients of Xi variables

X_i is the different independent variables

t is Time from 1, 2…, 12 years

ε_i is the error term

When the above general model converted to each variable the following equation will be create

Cash conversion period and profitability measures (MODEL 1)

$$ROA\,i = \beta 0 + \beta 1(CCPi) + \beta 2(CR) + \beta 3(DR) + \beta 4(FS) + \beta 5(FGR) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Account receivable period and profitability measures (MODEL 2)

$$ROA\,i = \beta 0 + \beta 1(ARPi) + \beta 2(CR) + \beta 3(DR) + \beta 4(FS) + \beta 5(FGR) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Inventory conversion period and profitability measures (MODEL 3)

$$ROA\,i = \beta 0 + \beta 1(ICPi) + \beta 2(CR) + \beta 3(DR) + \beta 4(FS) + \beta 5(FGR) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Account payable period and profitability measures (MODEL 4)

$$ROA\,i = \beta 0 + \beta 1(APPi) + \beta 2(CR) + \beta 3(DR) + \beta 4(FS) + \beta 5(FGR) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where

ROA= Return on asset

CCP=Cash conversion period

ARP= Account receivable period

ICP=Inventory conversion period

APP=Account payable period

CR= Current ratio

DR= Debt ratio

FS= Firm size

FGR= Firm growth rate

ε= Error term

CHAPTER FOUR:

DATA ANALYSIS AND DISCUSSION

This chapter deals with the presentation of the results and analysis of the study. The data were run by using SPSS software version 20 and STATA version 12. First the descriptive statistics and the correlation analysis were discussed then followed by the diagnostic test, which is necessary to fulfill the assumption of the classical linear regression model. Then, econometric analysis and discussion of the main finding of the study were presented. Finally, the results of the regression analysis were discussed by supporting empirical evidence and the hypothesis tested.

4.1. DESCRIPTIVE STATISTICS

This section presents the descriptive statistics of dependent, independent variables, and control variables used in the study for the sugar manufacturing companies. The dependent variables used in the study was ROA and while the independent variables were Cash conversion period (CCP), Account receivable period (ARP), Account payable period (APP), Inventory conversion period (ICP), and the control variables are Current ratio (CR), Debit ratio (DR), Firm size(FS) and Firm growth rate (FGR). Thus, the total observation for each variables were 36 (panel data of 3 sugar manufacturing companies for 12 years). Descriptive analysis shows the average, and standard deviation of the different variables of interest in the study. It also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable can achieve.

Descriptive statistics result interpretation for dependent variable

The ROA has a mean value of .0480. This indicates that the sugar companies on average earned a net income of .0480 from its total asset and it also deviate by .15898. It means that value of profitability can deviate from mean to both sides by .15898. The maximum value of ROA was .48 and minimum value of -.22. That means, the most profitable companies earned .48 centof net income for a single birr invested in the assets of the firm. On the other hand, the least profitable companies incurred .22 cents of loss for each birr investment in the assets of the firm.

Descriptive statistics result interpretation for independent variable

Regarding the independent variables the descriptive statistics for the four measures of efficiency of working capital management, namely, Cash conversion period, Account receivable period , Account payable period, Inventory conversion period are also presented in the same table.

Accounts receivable period, a measurement for collection policy, is averaged to 187days. The interpretation for the average of the account receivable period is that, firms in the sample wait 187days on average to collect cash from credit sales. The Account receivable period can vary by 185to both sides of the mean value. The minimum and the maximum Account receivable period for the sampled firms are 17 and 594 days respectively. On the other hand, the Accounts payable payment period measures the average number of days it takes an entity to pay its suppliers has a mean value of 238and deviate from the mean by 229. The minimum day of account payable is -26 and has a maximum day of 969. The other independent variable used in the study was the inventory conversion period which is a measure of days of inventory wait until its sales. From the descriptive result the sugar manufacturing company's wait an average of 404 days and deviate by 249from the mean value. Also the inventory collection period has a minimum value of -485 and maximum value of 904. On the other hand, the cash conversion period measured by adding account receivable period to inventory conversion period then subtract account payable period has an average value of 148and standard deviation of 394. Also has a minimum value of -761 and maximum value of 985.

Descriptive statistics result interpretation for control variable

Regarding the control variables, the first one is debt ratio it shows that how much of the firm's assets is financed by external debt from the study the sugar manufacturing companies have an average value of.4922 this means sugar companies in Ethiopia on average 49% of finance there asset by external debt. The debt ratio has minimum value of .03 and maximum value of .86 and standard deviation of .21106. The other control variable used as a measure of liquidity in the study is current ratio. Current ratio measured by dividing current asset by current liability has the mean value of 1.4638 and deviate from the mean from both sides by .64750.

In addition, the above table also includes the descriptive statistics of firm size measured by natural logarithm of sales. The mean value of natural log of sales is 20.1575 while the standard

deviation is .56791 and The maximum value of natural of sales for a company is 21.14 and the minimum is 18.96. The last control variable of the study is firm growth rate and from the result sugar manufacturing companies have .1576 mean value and standard deviation of .30130. -.46 is the minimum value and 1.24 is he maximum value of firm growth rate in Ethiopia sugar companies.

Table 4:1 Summary of descriptive statistics

Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
ROA	-.22	.48	.0480	.15898
CCP	-761	985	148.09	394.063
ARP	17	594	187.57	185.571
ICP	48	904	403.94	248.855
APP	26	969	238.40	228.897
DR	.03	.86	.4922	.21106
CR	.38	3.47	1.4638	.64750
FGR	.46	1.24	.1576	.30130
FS	18.96	21.14	20.1575	.56791

Source: SPSS output Based on Annual report of companies from 2002-2013

4.2 CORRELATION ANALYSIS

One of the measures used to identify the degree of linear association between variables is Pearson correlation. Values of the correlation coefficient are always ranged between +1 and -1. A correlation coefficient of +1 indicates that the existence of a perfect positive association between the two variables; while a correlation coefficient of -1 indicates perfect negative association. A correlation coefficient of zero, on the other hand, indicates the absence of relationship (association) between two variables (Brooks, 2008). In this study, the researcher employed the Pearson product moment of correlation coefficient in order to find the association of the variables with the profitability of sugar manufacturing companies in Ethiopia.

Based on the table 4.2, account payable, debt ratio, current ratio and firm size have negative relation with a coefficient of -.299, -.054, -.076, and -.440 respectively with return on asset. This correlation shows as account receivable period, account payable period, debt ratio, Current ratio, and firm size increase by 100% the profitability of the company will decrease by 30%, 5%, 8%, and 44% respectively. On the other hand cash conversion period , account receivable period, inventory conversion period and firm growth rate have positive relation with Return on asset by a correlation coefficient of .058, .309, .055and .150respectively. This means when the cash conversion period, account receivable and firm growth rate increase by 100% the profitability of sugar manufacturing companies increase by 6%, 31%, 5% and 15% respectively.

Table 4:2 Pearson correlation coefficient matrixes for ROA

Correlations

	ROA	CCP	ARP	ICP	APP	DR	CR	FGR	FS
ROA	1	.058	.309	.055	-.299	-.054	-.076	.150	-.440
CCP		1	.130	.556	-.453	-.385	.357	-.152	.159
ARP			1	-.125	-.069	.195	-.073	-.004	.301
ICP				1	.075	-.068	.271	-.123	-.111
APP					1	.551	-.421	.124	-.113
DR						1	-.731	.082	-.074
CR							1	-.243	.210
FGR								1	.099
FS									1

Source: SPSS output Based on Annual report of companies from 2002-2013

4.3 TESTING ASSUMPTIONS OF CLASSICAL LINEAR REGRESSION MODEL (CLRM)

Before the regressions were run tests for fulfillment of basic CLRM assumptions are tested. In order to draw correct estimation, using regression model to analyze the data requires certain assumptions to be fulfilled. Under this subsection, the study presented five different results for the tests of CLRM such as tests of normality assumption, tests for multi co linearity, tests for the assumption that errors have zero mean, tests for homoscedasticity, and tests for the absence of autocorrelation.

4.3.1 Normality test

In this study to check whether the normality test was adequately meet, the histogram was used. If the residuals are normally distributed, the histogram should be bell-shaped (Brooks, 2008). Figure 4.1 shows that the shape of the histogram indicates that the residuals are normally distributed.

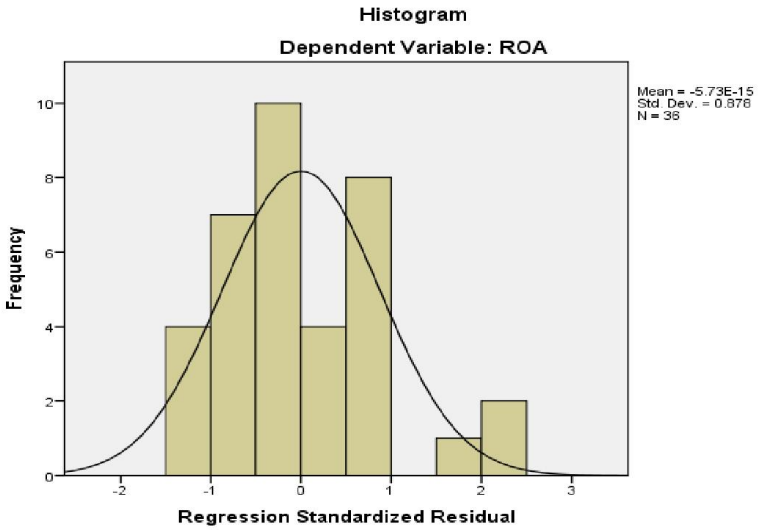

Figure 4.1 ROA model normality test

Source: SPSS output Based on Annual report of companies from 2002-2013

4.3.2 Multicolinearity test

According to Brooks (2008) Multicolinearity is the existence of a perfect, or exact, linear relationship among some or all explanatory variables of a regression model. If the explanatory variables were correlated to one another, adding or removing a variable from a regression equation would cause the values of the coefficients on the other variables to change.As noted in Gujarati (2004) if multicolinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite. If multicolinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy.

Table 4:3 Pearson correlation matrixes

Correlations

	CCP	ARP	ICP	APP	DR	CR	FGR	FS
CCP	1	.130	.556	-.453	-.385	.357	-.152	.159
ARP		1	-.125	-.069	.195	-.073	-.004	.301
ICP			1	.075	-.068	.271	-.123	-.111
APP				1	.551	-.421	.124	-.113
DR					1	-.731	.082	-.074
CR						1	-.243	.210
FGR							1	.099
FS								1

Source: SPSS output Based on Annual report of companies from 2002-2013

The pair wise correlations between variables are lays between ±1 if the correlation coefficient has positive value they are positively correlated if they have negative value they will have negative relation. As shown from table 4.3of the correlation matrix the correlation between the explanatory variable lay between .004and .731, by the same token the correlation among the explanatory variables was less than .731. This shows there is no higher correlation among the explanatory variables, according to Li Yuqi (as cited in Abebe, 2014) stated that problem of multicolinearity exists when correlation coefficient among the explanatory variables are greater than 0.75. From this, it is possible to conclude that there is no multicolinearity problem among the independent variables so that the results can be successfully estimated.

The other method to test the multicolinearity problem is the VIF and tolerance value. According to Pallant(2007) to avoid the possibility of multicolinearity, it is important that the results from collinearitydiagnostics should have tolerance value above 0.10 and variance inflation factor (VIF), which is the inverse of the tolerance value, less than 10 as the small value of tolerance indicate the high multiple correlation with other variables.

Table 4:4 Multicolinearity Statistics

	Collinearity Statistics	
	Tolerance	VIF
CCP	.355	2.821
ARP	.764	1.309
ICP	.404	2.477
APP	.507	1.972
DR	.306	3.270
CR	.324	3.085
FGR	.867	1.153
FS	.746	1.340

Source: SPSS output Based on Annual report of companies from 2002-2013

On table 4.4 the maximum value for variance inflation factor (VIF) is scored by debt ratio (DR) which is 3.270,while minimum value of 1.153is scored by Firm growth rate (FGR). Similarly, other statistical results of 2.821, 1.309, 2.477, 1.972, 3.270, and 1.340 are accounted respectively for CCP, ARP, ICP, APP, CR, and FS. regarding tolerance value all the variables have 35%, 76%, 40%, 50%, 30%,32%, 87% and 75% for CCP, ARP,ICP, APP, DR, CR, FGR and FS respectively which is the minimum value of tolerance is 30%; from this VIF and tolerance value it will be possible to conclude that there is no multicollinearity problem among the independent variables.

4.3.3 Autocorrelation test

According to Brook (2008) if the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or that they are 'serially correlated'. To test the presence of autocorrelation, the Durbin-Watson test is used, Durbin Watson is a test for first order autocorrelation (it is a test for a relationship between an error and its immediate previous value). If the test approaches to two, it is an indication of the absence of autocorrelation. The authors Makridakis and Wheelwright (as cited in Baveld, 2012) consider as Durbin Watson value between 1.5 and 2.5 as acceptable levels indicating no presence of collinearity. Some of these scores are somewhat lower than 1.5, but since the common rule indicate that score lower

than 1.0 may cause alarm, these score are still accepted. In this study the Durbin Watson test of1.317for ROA model shows the absence of severe autocorrelation problem.

Table 4:5 Autocorrelation test for ROA model

Durbin-Watson
1.317

Source: SPSS output Based on Annual report of companies from 2002-2013

4.3.4Hetroscedasticity

According to Brooks (2008) homoscedasticity is one of the assumptions of the CLRM which states that the variance of the errors must be constant. If the errors do not have a constant variance, they are said to be heteroscedastic. Accordingly, in order to detect the heteroscedasticity problems, Breusch-Pagan utilized in this study. This test states that if the p-value is significant at 95 confidence interval, the data has heteroscedasticity problem, whereas if the value is insignificant (greater than 0.05), the data has no heteroscedasticity problem. Thus, as shown below there is no heteroscedasticity problem for this study hence the p value is 9% showing insignificant value.

Breusch-Pagan test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of roa

chi2(1) = 2.98

Prob> chi2 = 0.0926

Source: STATA output Based on Annual report of companies from 2002-2013

4.3.5 Test result for significance of the model

In examining the effects of working capital management in sugar manufacturing company profitability , the study included eight (8) explanatory variables (i.e. cash conversion period, average conversion period, inventory conversion period, account payable period, debt ratio, current ratio, firm growth rate and firm size and one dependent variable (i.e. Return on asset).

However, to show how well the model containing those of eight explanatory Variables actually explains the variations in the dependent variables it is necessary to test it through goodness of fit statistic.

F statistics is one method of testing goodness of fit it is used to test significant of R, from the results; one can see that the model is fit with F statistics 9.335at p-value of .000ROA. Indicating that, over all, the model used for the study is significantly good enough in explaining the variation on the dependent variable.

Table 4:6 ANOVA linear regression for significant of the model

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.644	8	.081	9.335	.000
	Residual	.233	27	.009		
	Total	.877	35			

a. Dependent Variable: ROA

b. Predictors: (Constant), FS, DR, FGR, ICP, ARP, APP, CCP, CR

Source: SPSS output Based on Annual report of companies from 2002-2013

Similarly, the goodness of fit of the model can be measured by the square of the correlation coefficient also called R^2. According to Brook (2008) the most common goodness of fit statistic is R^2, Brook stated that R^2 is the square of the correlation between the value of the dependent variable and the corresponding fitted values from the model. This R^2 is always lying between 0 and 1. If this correlation is high (close to one), the model fits the data well, while if the correlation is low (close to zero), the model is not providing a good fit to the data.

From table 4.7 the value of R^2 is 73% and adjusted R^2 of 65%. From this the independent variables in the model are explaining 73% of the variations on the dependent variables. Thus, we can understand that the model of the study is providing a good fit to the data.

Table 4:7 Model summary of linear regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.857	.734	.656	.09289	1.317

a. Predictors: (Constant), FS, DR, FGR, ICP, ARP, APP, CCP, CR

b. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

4.4 MODEL SELECTION; FIXED EFFECT VERSUS RANDOM EFFECT MODELS

A multivariate regression analysis is used in order to investigate the effects of working capital management on the profitability of firms.The Fixed Effects Model explains the variations of profitability within firms while the pooled OLS explains the variation of profitability between firms (Mathuva 2009). A shortcoming of Fixed Effects Model is that it eliminates anything that is time invariant from the model (Deloof2003). In simple way the main difference between effect model and the random effect models is on the relationship between individual heterogeneity and the regressors. The null hypothesis states that they are systematic and the alternative states they are unsystematic. Meaning in the null hypotheses the relationship between the heterogeneity and regresses is not systematic, that is RE assumes they are uncorrelated and the alternate hypothesis states the relationship between them is systematic, that is FE assumes there exists correlation between the heterogeneity and regressors.the best way of choosing between the fixed effect model and the random effect models is running the Hausman test. The Hausman test checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results .According to Brooks (2008), if the p-value for the Hausman test is less than 1%, this shows that the random effects model is not appropriate and that the fixed effects model is to be preferred. Accordingly, table 4.8 of the Hausman specification tests shows that the model has a p-value of0.7724. This indicates that the random effect is preferred to the model. To continue the regression by OLS the Lagrangian multiplier test is appropriate, if the

probability P value is not significant it or greater than 5% it will be OLS. Therefore from below Lagrangian multiplier test the study has a P value of 1.0000 therefore it's possible to regress by using OLS.

Hausman Specification test

Test: Ho: difference in coefficients not systematic

chi2 (8) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 4.86

Prob>chi2 = 0.7724

(V_b-V_B is not positive definite)

Source: STATA output Based on Annual report of companies from 2002-2013

Lagrangian multiplier test

Breusch and Pagan Lagrangian multiplier test for random effects

roa[company,t] = Xb + u[company] + e[company,t]

Estimated results:

| Varsd = sqrt(Var)

---------+----------

roa | .0252733 .1589758

e | .0078442 .0885674

u | 0 0

Test: Var(u) = 0

chibar2 (01) = 0.00

Prob> chibar2 = 1.0000

Source: STATA output Based on Annual report of companies from 2002-2013

4.5REGRESSION

Even though the Pearson correlation analysis shows the relationship between the variables, it does not identify the causes from consequences (Shin and Soenen, 1998; and Deloof, 2003). The Pearson correlation does not provide a reliable indicator of association in a manner which controls for additional explanatory variables. Examining simple bivariate correlation in a conventional matrix does not take account of each variable's correlation with all other explanatory variables (Padachi, 2006); from this its unavoidable to undertake regression. The regression is estimated and run using Return on asset as an dependent variable. Further, all independent variables are run using cash conversion period, account receivable period, inventory conversion period, average payment period and other control variables such as debt ratio, current ratio, firm growth rate and firm size.

The study was run four models in which each independent variable is being exchanged respectively while keeping control variables constant. This is because the study wants to determine the effect of working capital management on company profitablity through finding the influence of each component of working capital management individually. This choice of determining separate influences is of consistence withRaheman and Nasr (2007); Sen and Oruc (2009);Deloof(2003); Teruel and Solano(2007); Raheman and Nasr(2007); Nazir and Afza(2009); and Kaddumi and Ramadan(2010). Therefore, this section present the regression outputs for each model.

4.5.1Regressions Result for cash conversion period (model 1)

From the Table 4.10 CCP has a positiveeffect on ROA at .009 coefficient but insignificant at .958 P-value at 95% confidence interval.At the same time debt ratio, current ratio, and firm size had negative effect on ROA at a coefficient of -.110, -.011, and -.467respectively and P value of .656, .964, and .009 respectively and firm growth rate has positive effect at .204 coefficient value and .238 P value. On the model summery table 4.9there is 24%R-squared, 1.100 value of Durbin-Watson and 1.922F-statistics.

Table 4:8 Result of Model Summaryof model 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.493	.243	.116	.14883	.243	1.922	.120	1.100

a. Predictors: (Constant), FS, DR, FGR, CCP, CR

b. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

Table 4:9Result of multiple regressions for Model 1

Coefficients

Model		Standardized Coefficients			Collinearity Statistics	
		Beta	T	Sig.	Tolerance	VIF
1	(Constant)		2.947	.006		
	CCP	.009	.053	.958	.815	1.228
	DR	-.110	-.451	.656	.424	2.358
	CR	-.011	-.045	.964	.400	2.501
	FGR	.204	1.204	.238	.877	1.140
	FS	-.467	-2.781	.009	.894	1.119

a. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

4.5.2Regressions Result for Account receivable period (model 2)

On table 4.12 Account receivable period have a positive and significant effect on Return on asset with a beta coefficient of .550 and .000 of P-value. The other variables affect the Return on asset at a coefficient of -.245, -.023, .231, and -.641 for debt ratio, current ratio, firm growth rate and firm size respectively and except firm size that have a P value of .000 others are insignificant. The model $R^2$is 50% also it is fit with the F statistics of6.043at p-value of 0.001. The Tolerance statistics the minimum value were .401and the maximum Variance Inflation Factor (VIF) were 2.495. It is indicating that there were no multicolinearity problems

among the independent variables in the data. The Durbin-Watson (DW) result shows that 1.255.

Table 4:10 Result of Model Summary of model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.708	.502	.419	.12071	.502	6.043	.001	1.255

a. Predictors: (Constant), FS, DR, FGR, ARP, CR
b. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

Table 4:11 Result of multiple regressions for Model 2

Coefficients

Model		Standardized Coefficients			Collinearity Statistics	
		Beta	T	Sig.	Tolerance	VIF
1	(Constant)		4.691	.000		
	ARP	.550	3.951	.000	.859	1.165
	DR	-.245	-1.250	.221	.434	2.305
	CR	-.023	-.115	.909	.401	2.495
	FGR	.231	1.687	.102	.889	1.125
	FS	-.641	-4.515	.000	.823	1.215

a. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

4.5.3Regressions Result for inventory conversion period (model 3)

Inventory conversion period positively affect return on asset with a beta coefficient of .028 but it is insignificant by .872 P-values. Firm growth rate have a positive effect with .203beta value and the others debt ratio, current ratio and firm size have negative effect on return on asset at,-.122, -.026 and -.203 coefficient. Except firm size with a P value of .011the other variables are insignificant all are regress by 95% precision level. The model R^2 24% also it is fit with F

statistics of1.817 at p-value of .119. The Tolerance statistics the minimum value were 35%and the maximum Variance Inflation Factor (VIF) were 2.842. It is indicating that there were no multicolinearity problems among the independent variables in the data. The Durbin-Watson (DW) result shows that 1.093.

Table 4:12 Result of Model Summary of model 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	F Change	Sig. F Change	
1	.493[a]	.243	.117	.14878	.243	1.928	.119	1.093

a. Predictors: (Constant), FS, DR, FGR, ICP, CR

b. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

Table 4:13 Result of multiple regressions for Model 3

Coefficients

Model		Standardized Coefficients			Collinearity Statistics	
		Beta	t	Sig.	Tolerance	VIF
1	(Constant)		2.868	.007		
	ICP	.028	.162	.872	.852	1.174
	DR	-.122	-.499	.621	.425	2.354
	CR	-.026	-.097	.924	.352	2.842
	FGR	.203	1.207	.237	.892	1.122
	FS	-.461	-2.709	.011	.873	1.145

a. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

4.5.4Regressions Result for Account payable period (model 4)

Model 4 have an $R^2$of 39% also it is fit with F statistics of 3.861at p-value of .008. The Tolerance statistics were greater than 37% and the Variance Inflation Factor (VIF) were less

than 2.688. It is indicating that there were no multi-collinearity problems among the independent variables in the data. The Durbin-Watson (DW) result shows 1.098.

From, table 4.16 the account payable period have a standardize coefficient value of -.467 at .011 P-value this means the account payable period negatively affect return on asset at 5% significant level similarly when the account payable period increases the return on asset will decrease. Also firm growth rate has positive effect with a beta value of .247. The other variablesDebt ratio, current ratio and firm size have negative effect on return on asset by -.146, -.001, and -.506 of coefficient and a P-value of .536, .997 and .002 respectively.

Table 4:14 Result of Model Summary of model 4

Model Summary

					Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change	Durbin-Watson
1	.626	.392	.290	.13340	.392	3.861	.008	1.098

a. Predictors: (Constant), FS, DR, FGR, APP, CR

b. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

Table 4:15 Result of multiple regressions for Model 4

Coefficients

		Standardized Coefficients			Collinearity Statistics	
Model		Beta	t	Sig.	Tolerance	VIF
1	(Constant)		3.533	.001		
	APP	-.467	-2.711	.011	.684	1.463
	DR	-.146	-.626	.536	.372	2.688
	CR	-.001	-.003	.997	.401	2.495
	FGR	.247	1.627	.114	.882	1.134
	FS	-.506	-3.379	.002	.903	1.108

a. Dependent Variable: ROA

Source: SPSS output Based on Annual report of companies from 2002-2013

4.6 DISCUSSIONS OF THE RESULTS

In this sub section the result of the regression analysis was presented by supporting the result with the previous studies made in this area. This is undertaken with reference of the results obtained from the regression analysis made in the previous section to examine the Effects of working capital management on the sugar manufacturing companies. The study made regression by taking return on asset as dependent variable and cash conversion period, account receivable period, inventory conversion period, and average payment period as independent variable. The study found that account receivable period has significant positive effect on profitablity and account payable period has significant negative effect on profitablity. Cash conversion period and inventory conversion period has positive insignificant relation with profitablity. The regression results further discussed as follows.

4.6.1 ACCOUNT RECEIVABLE PERIOD

The regression result on table 4.11 State that account receivable positively and significantly affect the return on asset of sugar manufacturing companies in Ethiopia. It has a coefficient of .550 and P-value of .000. This means the movement in accounts receivable will significantly and positively affect profitability of sugar manufacturing companies in Ethiopia. Most of the findings indicate that there is negative effect of Accounts receivable period on profitability. This implies that a longer time span for retrieving payments from customers is associated with low profits. Deloof (2003);Lazaridis et al. (2006);Mekonnen(2011); and Gill et al.(2011)who found negative significant effect for instance, rationalize their finding by stating that firms decrease the accounts receivables in order to reduce the cash gap in the cash conversion cycle. But still there exist some inconclusiveness about the findings. Sharma and Kumar (2011) who conducted their research in India found that account recievable period has a positive effect on profitablity and implies that firms can improve the profitability by lengthening the credit period for their customers. However,Ghosh and Maji (2003) found that collection period has a positive effect on EBIT, this indicate that credit facility increases sales of firm which ultimately increases profitability. Similar to the previous studies, the finding of this study rationalizes the empirical resultas the longer account receivable period lead to high profitability. The rationale of these study is that grant longer credit periods in order to sustain in the market and respond to

competition. Also large account receivable period may stimulate sales because it allows customers to assess product quality before paying (Deloof, 2003).

4.6.2 ACCOUNT PAYABLE PERIOD

Account payable period affect return on asset significantly at .011 p-values and negatively at standardize coefficient of -.467. This means Account payable period affect return on asset negatively at 5% significant level which is increase in Account payable period lead to decrease return on asset of sugar manufacturing companies in Ethiopia. In contrast to other researchers, Mathuva (2009) find that number of days Accounts payable has a positive effect on profitability, the study explained that firms wait longer to pay their bills in order benefit from cash available for working capital needs and longer delays in payments result in higher levels of working capital levels that can be reserved and used to increase the profitability. The rational for the empirical result is that less profitable firms tend to wait longer to pay their bills and there is another benefit by paying earlier that is discount. This is also confirmed by Deloof (2003) this result is similar with studies of the following researchers: Deloof (2003); Karaduman (2004); LazaridisandTryfonidis(2006); Padachi(2006); Eljelly(2004); Mathuva (2009) and Sharma and Kumar(2011).

4.6.3CASH CONVERTION CICLE

A popular measure of Working Capital Management (WCM) is the cash conversion cycle (Deloof, 2003. Over the years, researchers found a negative effect of number of days Cash Conversion Cycle on profitability (Soekhoe, 2012); Also Amarjit et al. (2010); Ebenezer andAsiedu (2013); and Ademola (2014) study result show that cash conversion cycle has positive but insignificant effect on profitability of the manufacturing firms. The study empirical result showsthat cash conversion periodhas insignificant positiveeffect on Return on asset with a coefficient of .009 and P value of .958.The longer this time lag, the larger the investment in working capital. A longer cash conversion cycle might increase profitability because it leads to higher sales (Deloof, 2003).From this firm can maximize profitability by increasing the cash conversion period, but it is not a critical factor to consider when taking decision to improve profitability.

4.6.4INVENTORY CONVERTION PERIOD

According to table 4.13 inventory conversion periodshas positive and insignificant effect on return on asset on Ethiopian sugar manufacturing firms at standard coefficient of .028 and P-value of .872. Whileresearchers found a negative effect of number of days of inventories on profitabilityi.e.Deloof(2003);Karaduman(2004);RahemanandNasr(2007);LazaridisandTryfonidis (2006); Terneland Solano (2007);Mekonnen(2011); and Wibishet (2014). There also exists a contradictory Mathuv(2009); Kaddumi and Ramadan(2010);and Soekhoe(2012) found a positive effect of inventory conversion period on profitablity correspondingly Amarjit et al., (2010) found that profitability positively and insignificantly affected by inventory conversion periods.Mathuva (2009) suggests that by having high inventory levels firms reduce bottlenecks in the production process and the loss of business due to deficiency of products also Soekhoe (2012) investigates the effects of Working Capital Management on the profitability over a period of five years for Dutch Listed firms find a significant and positive effect of inventory conversion period on profitability. The study states that Dutch firms hold high inventory levels in order to increase the profitability in terms of reducing the supply costs (economies of scale) and to prevent bottlenecks in the production process due to scarcity of products. This also reduces the supply costs of products and protects the firm from possible price fluctuation due to macroeconomic factors. Maintaining high levels of inventories also helps in reducing the cost of supplying the products and protects the firm against price fluctuations as a result of adverse macroeconomic factors. The rational for this empirical result is inventory conversion period affects return on asset positively but it has insignificant P value; when inventory conversion period increase the profitability of sugar manufacturing company also increase. Similar to the previous findings having large inventory protect the companies from stock outs in time of high demand because this time market fluctuate according to demand and supply hence larger inventory reduces the risk of a stock-out also increasing inventory lead to increase profitability by producing products at a time of low resource cost according Deloof (2003) large inventory may lead to higher sales.

4.7HYPOTHESIS TESTING

The following section provides the results for each explanatory variables and their importance in determining the profitability of sugar manufacturing company in Ethiopia.

HP_1: Cash conversion period has negative significant effect on sugar companies' profitability in Ethiopia.

The result of model 1 in table 4.9 indicated that cash conversion period have insignificant negative (-.019) effect on profitability of sugar manufacturing companies having (P-value = 0.915). Therefore the null hypothesis was failed to reject since cash conversion period has no significant negative effect on profitability.

HP_2: Accounts receivable has significant negative effect on sugar companies' profitability in Ethiopia.

The second hypothesis was accept the null hypothesis because of account receivable period significantly and positively affect the profitability of sugar manufacturing companies in Ethiopia at .550of beta value and .000 P value as shown on table 4.11.

HP_3: Inventory holding period has significant negative effect on sugar companies' profitability in Ethiopia.

The result in Table 4.13 shows that inventory conversion period have positive effect on profitability of sugar manufacturing companies in Ethiopia but it was found to be insignificant since the p- value is .872. Therefore it is possible to accept the null hypothesis since inventory conversion period has positive insignificant effect on profitablity.

HP_4: Accounts payable period has significant negative effect on sugar companies' profitability in Ethiopia.

At the table 4.15 the coefficient of account payable period (APP) shows -.467and P value of .011 indicating that average payment periods has significant negative effect on profitability at 5% significance level. Therefore null hypothesis was failed to accept in the study because average payment period has negative significant effect on profitability of sugar manufacturing companies in Ethiopia.

HP_5: Liquidity has significant negative effect on sugar companies' profitability in Ethiopia.

The study use current ratio as a measure of liquidity. The result of regression indicated that current ratio has negative but insignificant effect on profitability of sugar manufacturing companies. Therefore, the null hypothesis was accepted because of insignificant effect of liquidity on profitability.

HP_6: Firm size has significant positive effect on sugar companies' profitability in Ethiopia.

The results show that firm size has negative and statistically significant effect on profitability. Thus, any increase in firm size is accompanied with a decreased in profitability. The result is similar with the findings of Ali and Hassan (2010) who found a negative and significant effect of firm size on profitablity. This suggests that the larger the size of the firm, it's difficult to manage its production and thus reduce its profitability. Then the study accept the null hypothesis which states, Firm size has no significant negative effect on sugar companies' profitability in Ethiopia.

HP_7: Debt used has significant negative effect on sugar companies' profitability in Ethiopia.

The result in the models shows that debt ratio have negative effect on profitability of sugar manufacturing companies in Ethiopia but insignificant P value. In Ethiopian sugar manufacturing company on average 49% of their asset Finance by debt but this result is insignificant. Therefore, the null hypothesis was accepted because according to the finding of the study debt ratio has a negative insignificant effect on profitability.

HP_8: Firm growth rate has positive significant effect on sugar companies' profitability in Ethiopia.

Firm growth rate has positive but insignificant effect on profitability. Therefore null hypothesis was failed to reject in the study because of firm growth rate has positive insignificant effect on profitability of sugar manufacturing companies in Ethiopia.

UNIT FIVE:

CONCLUSIONS AND RECOMMENDATION

The purpose of this research was to examine the effects of working capital management on profitability within Ethiopian sugar manufacturing company. Based on the finding of the study conclusions were drawn and possible recommendations were forwarded.

5.1 CONCLUSION

Working Capital Management is an important component of corporate financial management and it refers to management of current assets and current liabilities. Its management affects the profitablity of the company. To achieve the objective of the study data was analyzed on quantitative basis using descriptive statistics, Pearson's correlation and OLS regression analysis

Descriptive results show that the sugar companies on average earned a net income of .0480 from its total asset, with the maximum value of .48 and minimum value of -.22 of ROA. The cash conversion period which is a compressive measure of working capital measured by adding account receivable period to inventory conversion period then subtract account payable period has an average value of 148 and also has a minimum value of -761 and maximum value of 985. Firms in the sample wait 187 days on average to collect cash from credit sales. On the other hand, the Accounts payable period measures the average number of days it takes an entity to pay its suppliers has a mean value of 238. The minimum day of account payable is -26 and has a maximum day of 969. The other independent variable used in the study was the inventory conversion period which is a measure of days of inventory wait until its sales. From the descriptive result the sugar manufacturing company's wait an average of 404 days and has a minimum value of -485 and maximum value of 904.

The Pearson correlation result shows account payable, debt ratio, current ratio and firm size have negative relation with a coefficient of -.299, -.054, -.076, and -.440 respectively with return on asset. On the other hand cash conversion period, account receivable period, inventory conversion period and firm growth rate have positive relation with Return on asset by a correlation coefficient of .058, .309, .055 and .150 respectively.

OLS regression was used to examine the effect of working capital management on Ethiopian sugar manufacturing companies' profitablity but before running the regression the CLRM assumptions were tested such as normality test, Multicolinearity test, autocorrelation test, hetroscedasticity test, and test for significance of the model were tested and all tests fulfilled the assumption. Based on the regression result the study found that profitability has affected positively by account receivable period from this Ethiopian sugar manufacturing company can improve their profitability by increasing period of account receivable. The rational is granting longer credit periods will lead to sustain in the market and respond to competition also it may stimulate sales because it allows a firm to access product quality before paying.

Accounts payable period has a significant negative effect on Ethiopian sugar manufacturing companies' profitability. The rational for the empirical result is that less profitable firms tend to wait longer to pay their bills (This is also confirmed by Deloof, 2003) and there is another benefit by paying earlier that is discount.

The regression result also indicates that inventory conversion period and cash conversion period have no significant effect on profitablity of Ethiopian sugar manufacturing companies. Furthermore control variables i.e. debt ratio, current ratio, and firm growth rate have no significant effect on sugar manufacturing companies profitablity, but contrary to the theoretical predictions and most empirical findings the study found significant negative effect of firm size on profitability this shows that the larger the size of the firm, it is difficult to manage its production factors and thus reduce its profitability furthermore, increase in firm size lead to underutilization of fixed facilities and the resultant maintenance cost..

Generally Ethiopian sugar manufacturing companies have large amounts of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a significant effect on profitability of those companies. out of four independent variables; only two were significant i.e. 'accounts receivables period' and 'accounts payable period', as the coefficient of .550and -.467at 1% and 5% significant level respectively, Accounts receivables period influence most in predicting profitability. These results suggest that managers can increase profitablity by reducing the account payable period and increasing the Accounts receivable Period to a reasonable maximum level. The overall

result showed that working capital management affects profitability of sugar manufacturing companies.

5.2 RECOMMENDATION

Based on the result of the regression analysis, the study forwarded the following recommendations.

- Ethiopian sugar manufacturing companies better lengthen their credit period to their customers by implementing applicable collection policy for the sector. Companies have to be careful while selling in credit because in having long account receivable period it may leads to high bad debts. As much as possible, bad debts should be maintained to the minimum possible amount in the management because it may lead to liquidity problems which may lead to the total collapse of the business.
- The study recommends that in order to increase profitablity Ethiopian sugar manufacturing company have to pay their bills early from this action the firm can benefit from discount(delaying of payables can be expensive if a firm is offered a discount for the early payment) and will have a worthy relation with the suppliers for future transaction.

5.3 FURTHER RESEARCH DIRECTIONS

This study was concerned the effects of working capital management on profitability of sugar manufacturing companies in Ethiopia. In order to undertake this study; only sugar manufacturing companies were used by the researcher. Future research should study by including different manufacturing sectors. This study was limited only to return on asset for profitablity measurement from this future research should narrow the limitation by include other profitablity measurements i.e. return on equity, Net profit margin, Gross profit margin etc. At the end, further research can extend the scope of the study by using long time series data and can increase the strength of the research by incorporating primary data.

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Declaration

I, Lakech Estifanos George, declare that the thesis comprises my own work. In compliance with internationally accepted practices, I have duly acknowledged and referenced all materials used in this work. I understand that non-adherence to the principles of academic honesty and integrity, misrepresentation/fabrication of any idea/data/fact/source will constitute sufficient ground for disciplinary action by the University and can also evoke penal action from the sources which have not been properly cited or acknowledged

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Name of Student

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Date